TAMPEREEN TEKNILLINEN YLIOPISTO
TAMPERE UNIVERSITY OF TECHNOLOGY

SVEN KESTILÄ

OWNERSHIP STRUCTURE AND ITS DEVELOPMENT: CASE STUDY ON SEVEN LISTED FINNISH COMPANIES

Master of Science Thesis

Examiner: Professor Juho Kanniainen
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ABSTRACT

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Efficient capital markets are essential for market-based economies and their growth. Economic growth is one of the most important factors that enable societies to improve their citizens well-being in multiple ways, for an example increased resources allocated to education and healthcare enabling enhanced outcomes in quality of education and healthcare. Equity ownership provides a way for individuals and groups for partaking in the economic growth of individual companies via dividends and increase in equity market value. This research aims to answer the following questions: *What is the ownership structure of Finnish public companies like? How does this ownership structure evolve over time? Do investor groups have differing, systematic tendencies from one and another in terms of their buying and selling decisions related to the case companies?*

To answer these questions, a multiple case, longitudinal (1995-2016) study was conducted for seven Finnish publicly listed companies differing in multiple variables including, but not limited to, operating industry, market capitalization, global reach and size of operations. The data used in the research was a combination of publicly available market data through NASDAQ, operator of Helsinki Stock Exchange and non-public trading and ownership data obtained from Euroclear for research purposes. All nominee shareholdings were excluded from the data analysis. Scientific sources for literature review were obtained through various finance and economic theory publications. This review of past literature enabled identification of trends in investors' market behavior as well as assessment of ownership structure and corporate control in an international environment.

Results indicate that the Finnish case companies have varying ownership structures. Ownership structures have a tendency to remain rather stable over time. Household investors tend to exhibit strong contrarian trading patterns. Institutional investors tend to follow both momentum and contrarian trading strategy. Investor sophistication seems to be inversely correlated with the degree of contrarian-based trading. These findings are supported by past research.

TIIVISTELMÄ

Sven Kestilä: Omistajarakenne ja sen kehitys: Case-tutkimus seitsemästä suomalaisesta pörssilistatusta yrityksestä
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Tehokkaat pääomamarkkinat ovat elintärkeä osa markkinataloutta ja talouden kasvua. Talouskasvu on yksi tärkeimmistä vaikuttajista yhteiskunnan kykyyn parantaa kansalaisten hyvinvointia monilla tavoilla, kuten ohjaamalla resursseja koulutukseen ja terveydenhuoltoon. Korkealaatuinen koulutus ja terveydenhuollon kehitys ovat esimerkkejä tästä hyvinvoinnista. Osakkeiden omistaminen antaa kansalaisille ja erilaisille ryhmille mahdollisuuden osallistua yksittäisten yritysten tuottamaan talouskasvuun omistusten tuomien osinkojen sekä osakkeiden hintakehityksen myötä. Tämä tutkimus pyrkii vastaamaan seuraaviin kysymyksiin: *Millainen omistajarakenne pörssilistatuilla, suomalaisilla yrityksillä on? Miten tämä omistusrakenne kehittyy ajan funktiona? Onko eri sijoittajaryhmillä systemaattisia tendenssejä osakkeiden osto- ja myyntipäätösten osalta tapausyritysten suhteen?*

Jotta näihin kysymyksiin pystyttäisiin vastaamaan, toteutettiin seitsemän suomalaisen yritystapauksen pitkittäistutkimus (1995-2016). Yritykset erosivat toisistaan monella mittarilla, mukaan lukien esimerkiksi teollisuusala, markkina-arvo, kansainvälistymisen aste ja toimintojen suuruusluokka. Tutkimuksessa käytetty data on yhdistelmä julkisesti saatavilla olevaa markkinadataa NASDAQ:lta, Helsingin pörssin operaattorilta sekä ei-julkisesti saatavilla olevaa omistus- ja kaupankäyntidataa Euroclear:ltä tutkimustarkoituksiin. Hallintarekisterissä olevia osakeomistuksia ei ole otettu huomioon data-analyysissä. Tieteelliset lähteet kirjallisuuskatsaukseen on saatu lukuisista talous- ja rahoitusalan tieteellisistä julkaisuista. Kirjallisuuskatsaus mahdollisti sijoittajien käyttäytymistrendien identifioimisen ja kansainvälisen katsauksen omistajarakenteeseen ja yrityksien määräysvaltaan.

Tulosten perusteella kyseisillä suomalaisilla yrityksillä on hyvin erilaiset omistajarakenteet. Omistajarakenteet pysyvät tyypillisesti kohtalaisen stabiileina ajan kuluessa. Institutionaaliset sijoittajat käyttävät sekä momentum-, että vastavirran strategioita ja kotitaloussijoittajilla on selkeä taipumus vastavirran strategian seuraamiseen. Sijoittajan ammattimaisuus näyttää korreloivan käänteisesti vastavirran strategian voimakkuuden kanssa. Historialliset tutkimukset tukevat tämän tutkimuksen löydöksiä.

PREFACE

My heroes Charlie Munger and Warren Buffett have been quoted saying that they demand plenty of time being available on a daily basis to just sit and think. Most of the days that were scheduled for thesis work involved plenty of thinking and little else.

Finishing this project ends my journey at TUT which taught me plenty about life, business and people. Learning has always been my joy and studying at TUT was no exception. I would like to thank several people for making this road so diverse, fun and interesting. First I would never have completed this project without Juho and Milla, thank you for your guidance and help. Matti, Olli, Höysi, Mikko, Valtteri, Okko and Hans made campus life and the life after campus a lot of fun, you guys are great.

I'd never have completed this program without my mother and her support. Teija and Kerttu played their supporting roles well, which I am grateful for. I am very lucky to have so supportive siblings and father in the equation as well. My mom and dad in Arizona taught me the importance of hard work and never giving up. Santtu, Julius and Timo from my high school were essential for my success in both high school and university.

Lastly I would like to express gratitude to some of my heroes. My grandparents were the most hardworking and loving people I ever knew. Charlie and Warren encouraged me to seek wisdom and pursue learning. I wish that one day you can be proud of me and that I could be as loving and helpful to others as you have been to me.

Helsinki, 23.10.2018

Sven Kestilä

CONTENTS

LIST OF SYMBOLS AND ABBREVIATIONS

M&A	Mergers and acquisitions
NPV	Net present value, a method for estimating investment return rates
FFBA	Finnish Fur Breeders' Association, controlling shareholder of Saga Furs

1. INTRODUCTION

1.1 Background of the study

The stock market has provided companies an opportunity for companies to raise capital from the public for business ventures for decades and in certain markets for over a century. Simultaneously the public has had the opportunity to participate in various businesses as owners through ownership of stock certificates. Stock ownership can be used as a way to align the interest of business owners and managers where stock certificates entitle the owners to cash flows associated with the business – effectively aligning the owners' interests as they share common risks for both the upside and downside in the company and it's business prospects.

The actions in the market, especially during 'boom and bust' –cycles, has attracted major interest from all major media outlets and this has enabled the market to become a common subject of public discussion. A large proportion of all company ownership lies within major institutional investors such as pension funds and various investment vehicles where groups of decision-makers have great power over capital allocation – this can be for the benefit or detriment of the providers of the capital whether that be governments, high net worth individuals or regular tax payers. Therefore the capital allocation decisions deserve attention and critique from media outlets and the public.

Every 'boom and bust' cycle can result in a major redistribution of wealth due to the major volatility or swings in value of individual companies and the stock market as a whole. The financial crisis that began in 2008 resulted in one such redistribution of wealth and it is interesting to find out, who the winners and losers were and by studying the related effects to understand how such outcome came to be.

One can argue that the 'boom and bust' –cycles are inherent characteristics of a market-driven economy and it might be impossible to get rid of them completely by legislation. If it is so, society must critically look at the decision-making processes and outcomes of the past and look for cues as in how to reduce downside risks and increase upside risks of the public – especially when the majority of all households' pension funds are allocated by a small group of investors who are in control of the capital allocation decisions of major public and private pension funds.

The relation between ownership structure and short-term focus as well as incentives built into the capital structure of modern economies are matters of real concern (Graves & Waddock 1990). This concern, related to large institutional ownership of companies, has

been brought into attention almost 30 years ago, however the same issues still present themselves in the marketplace. This should grab the attention of everyone who assumes that the pension funds will be able to take care of their liabilities, as in pension payments, in the upcoming decades. Erenburg et al. (2016) found evidence that activist public pension managers have misaligned incentives or their actions are influenced by hubris . If by policy and/or practice Finnish pension funds were able to avoid the issue of short-term focus and the suboptimal rates of returns associated with it, the system might be able to function with greater efficiency and a decrease of long-term risks associated with the growing amount of retirees compared to the amount of people in the work force.

Investments are a major driver of economy growth in all market-based countries. According to Keynes' economic theory savings equal investments. OECD defines net household savings as the subtraction of household consumption from household disposable income, plus the change in net equity of households in pension funds. OECD data shows that during the 21st century Finnish household savings rate has been dismal ranging between the maximum of 3.38 % in 2009 and the minimum of -1.43 % in 2016, averaging 1.27 % for the years 2000 to 2016. During the same time period China's average savings rate is above 33 %. This is why investment quality and the related decision-making in Finland is of utmost importance.The small savings rate requires that current capital employed, mainly by pension funds, must be allocated efficiently in order for Finland to continue economic growth in the future.

1.2 Objective of the study

The objectives of the study relate to case companies ownership structure, their evolvement over time and investor group behavior. These objectives are compressed into focused research questions. The three questions posed by this research are the following:

What is the ownership structure of Finnish public companies like?

How does this ownership structure evolve over time?

Do investor groups have differing, systematic tendencies from one and another in terms of their buying and selling decisions related to the case companies?

The most important objective of this study is to shed light into the case companies' past ownership structures and their development over time. Past research findings and lessons are to be leveraged in order to understand the ownership structure and the dynamics around it. The three major areas of interest of this study are investor behavior, ownership structure and corporate control of public companies in the Finnish market.

In order to gain understanding of the selected companies' ownership structure it is essential to first obtain a view on which groups own equity in the company in question and the quantity of such ownership. Through the utilization of ownership structure snapshots over time, historical data of the companies' ownership structure is to be presented in this research. This might offer a glimpse into differing ownership structures and therefore differences in corporate control in a selection of listed Finnish companies. Nominee shareholdings are excluded from all data analysis and therefore the charts and tables presented in Chapter 5 will reflect only non-nominee shareholdings. This will not give a thorough picture of corporate control, however the purpose will be to shed light into non-nominee ownership structures of the case companies.

A more focused area that this study aims to research more in depth is the investor behavior of different types of investors especially those representing the households as a whole and institutional investor groups. In a zero-sum game there is always a loser and a winner to a trade and to look at aggregate totals of trades and portfolios is to look at the market with a broad lense. To gain a better view of the investor groups' behavior this study will look into the published research and market actions of the groups in order to detect trends and biases and to analyze and understand these trends and biases.

Through a monthly data analysis of investor groups' behavior within the selected case companies equity ownership, it is possible to look at long-term trends in capital allocation decisions by different owner groups with a focus on household investors and institutional investors. A key question to be answered by the data and it's rigorous analysis is how past returns affect different investors' buy and sell decisions and are there any identifiable trends, tendencies or strategies for each investor group.

What this analysis might enable are two separate, yet intertwined ideas. First is that the society and investors could have a critical look at past decision-making and self-reflect on decision-making processes in different investor groups. Any finding that might help an investor, whether that be a pension fund manager or a private individual, improve his/her decision-making process that would result in an increment in expected returns in the marketplace would benefit the individual in the case of a private investor and society as a whole in the case of a public/private pension fund manager. In theory, such an improvement in everyone's decision-making process would result in zero gain, however it is a far cry from reality that each individual would have an ability to get rid of his or her biases. All societies should have a major interest in improving decision-making processes of the major institutions to enable a more efficient system to the citizens.

Second, this might give an individual a real advantage or edge in the marketplace over the other marketplace participants. This idea is fascinating, yet extremely difficult and cumbersome to implement. Acknowledging first, then understanding and thirdly exploiting systemic biases is something that companies in general have a requirement to strive for in the competitive game of capitalism. This study aims to perform such an analysis of

historic behavioral biases as to provide information of value to market participants which might enable them to improve their competitive advantage in the game of capitalism.

1.3 Structure of the study

This thesis integrates information from various scientific views of companies and investors and their linkage through ownership structure of companies. Companies are viewed through the lense of the owners in the system of capitalism. The main focus of this study is on the data of ownership structures and changes within the structures, however to take a critical look at such data one must provide a framework for analysis. Such framework is provided through a global look at scientific studies done on corporate control, ownership structure and investor group behavior and the dynamic interplay of these factors in the marketplace.

Chapter 2 will provide a look at scientific literature done on corporate control and ownership structure of companies. Here, an analysis of different ownership types will be provided with guidance from history and historical data. How the ownership structure affects company performance and company value will be looked at. The performance and value of a company have quantitative metrics, yet there exists a qualitative framework for value and performance as well. A quantitative analysis might result in a completely different result than a qualitative analysis and these two, quantitative and qualitative analysis are necessary in order to reach a conclusion on both performance and value. Another two factors in the equation are company management and strategy, which affect each of the abovementioned – as well as ownership structure also has an effect on company management and strategy. These dynamics will be looked at thoroughly in Chapter 2 with multiple, different viewpoints provided by past research.

Chapter 3 defines and separates different investor groups from one and another. By searching past scientific literature and past research findings, this study aims to study the differences between the investor groups with a focus on household and institutional investors. While the two are separated for the study, these two groups are not completely separate as many professional managers will also have personal investments outside of their managed fund. Therefore there exists major overlap in investor groups, however sizeable effort is put into analyzing investors, their behavior and characteristics. Historical data and scientific studies in this field are ubiquitous and therefore this study has an objective to perform an efficient, yet thorough, analysis of past research in the field to provide the reader with a comprehensive picture of investor groups and their characteristics.

The core of Chapter 4 is about the research methods and data used in this study. Here, the selected cases will be outlined and introduced to the reader. The basic rationale for the case selection is provided and the data set used in the research will be described. Afterwards, the methodology of this research will be presented with a focus on establishing

the methods for evaluating different investor groups trading behavior by a momentum score variable. This variable will be used in two distinct analyses, the High/Low analysis and the Monthly analysis. These will be explained in Chapter 5.

The data analysis will be presented in Chapter 5. All exceptions and adjustments made to the raw data will be presented to the reader to give the analysis transparency as the majority of the case companies' data required adjustments for various reasons that will be explained. Next the High/Low analysis and Monthly analysis, respectively, will be presented. The results of the research will be outlined and presented in Chapter 6. Finally, Chapter 7 will provide the conclusion of the study. Discussion about meeting the objectives and the limitations of the study will be discussed and future research areas that were identified during the process of the study will be presented.

2. OWNERSHIP STRUCTURE & CORPORATE CONTROL IN LITERATURE

This chapter will look into different types of ownership structures and the corporate control associated with those. A historical outlook will provide points of reference for the study in Chapter 2.1, where multiple countries' ownership structures for companies will be presented. After the historical outlook we will demonstrate more depth in ownership structure and corporate control through past research into associated trends and effects. The first function of the company's owners, capital allocation, will be further discussed in Chapter 2.2 in terms of performance and value and the second function, exerting control, will be further discussed in Chapter 2.3. These two functions are further described below.

Owners are responsible for two important functions, first where to allocate their capital (given the scarcity of available resources) with incentives aligned as to maximize future cash flows & asset appreciation and second how to govern or control their investments to maximize efficiency e.g. pressuring weak-performing companies' management for changes. Exiting, or liquidating an investment is an alternative option for the owners instead of using their voting privilege to make changes with the goal of increasing efficiency. Given that institutional investors often hold large blocks of shares, an exit might not be feasible due to the deteriorating effect on asset value caused by liquidating a large ownership position. This can, in effect, encourage corporate activism and increase institutional investors' influence on corporate strategy. (Hoskisson et al. 2002)

Companies ownership structure, performance, value, management and strategy are interrelated with each other and therefore Chapters 2.1 through 2.3 will have some necessary overlap. Multiple paragraphs will reference other parts of the related issues throughout the Chapter 2 in order to provide a clear-cut and synthesized view of interplay and dynamics of the ownership structure, company performance, value, management and strategy.

2.1 Ownership structures & corporate control

Several different ownership structures for companies exist and in this study a categorization into six categories by Pedersen and Thomsen (1997) will be used as follows:

- *Dispersed ownership*
- *Dominant ownership*
- *Family-owned*
- *Foreign-owned*
- *Cooperative*
- *Government-owned*

Dispersed ownership here means that no single stockholder controls over 20 % of the shares or voting rights. In dominant ownership a company has a stockholder who has over 20 and less than 50 % of shares or voting rights. In family, foreign and government owned companies the respective owner has the majority of the shares or voting rights. Cooperatives are registered as cooperatives or majority owned by cooperatives. Concentrating ownership is the most direct way of aligning the cash flows and control rights of outside investors and the free rider problem can be avoided by having a substantial minority shareholder as the shareholder will have the incentive to collect information and monitor the management according to Shleifer and Vishny (1997). Poterba et al. (1995) concluded that individuals, or households, ultimately own all corporate equity whether it is through a financial intermediary such as a pension fund or directly via direct stock ownership.

Demsetz and Lehn (1985) theorized that by increasing the diffusion of ownership, the owners of the company have a greater incentive to shirk, creating benefits by giving the owner the ability to use his time and energy elsewhere while creating a disadvantage of poorer performance by the firm due to the lack of attention from the owner. They concluded that: “the more concentrated is ownership, the greater the degree to which benefits and costs are borne by the sole owner”. This results in owners neglecting some tasks of ownership, for an example neglect over poor management in need of change. Demsetz and Lehn (1985) studied the structure of corporate ownership and the related causes and consequences and found out that:

- The higher price of a given fraction of the company should reduce the degree to which ownership is concentrated
- A given degree of control requires a smaller share of the company the larger is the company
- Larger companies realize a smaller overall cost than do smaller companies with a more diffuse ownership structure

The ownership patterns of large corporations have been found by Porta et al. (1999) to be relatively stable and the largest firms in the richest economies tend to have most widely

dispersed ownership. Their research found that few firms tend to be widely held, except for economies with very good shareholder protection, and the control tends to lay within either the government or families. Surprising result of their research was that by far the most dominant form of controlling ownership was by families, not banks or corporations. Often, the controlling shareholders may exert excess power over the company relative to their rights to the cash flows primarily through management participation and the use of pyramids. Another type of excess control over cash flow rights (Shleifer & Vishny, 1997) is found in companies with different classes of stock where the one-share one-vote principle is forgone or pyramid structures are used, often giving controlling shareholders, typically families or governments, excess voting rights. (Porta et al. 1999)

Helwege et al. (2007) conducted research about initial public offerings in the US and ownership structure evolvement after the IPOs of the companies, respectively. They found that the time from the IPO to diffuse ownership is swift, in half of the companies they studied they found that insiders held less than 20 percent of cash flow rights after the IPO. For the companies under study, Helwege et al. (2007) found that on average share sales by insiders were as important as new equity offerings in explaining the decrease of insider ownership. In their data set, shares issued in the primary offerings and mergers/acquisitions were only a fraction of the increase in the share count – this might be explained partly by the prevalence and importance of stock option compensation in the US.

Evidence from Demsetz and Villalonga (2001) research support the view that the market does succeed in bringing forth ownership structures of approximate appropriateness for the companies that they serve, whether that be diffused or concentrated ownership structure. They listed circumstances that affect companies' ownership structure as economies of scale, regulation and the stability of the environment that the company operates in. The actual differences in ownership structures between countries are presented in Table 1 and these differences might partly be explained by a theory of path-dependent ownership, as ownership structures develop differently over time in different societies and environments.

Kirchmaier and Grant (2005) found that ownership structures in the largest European economies have considerable variance and that there exists a significant impact to firm performance due to ownership structure. One of their most significant results was that company ownership structures are path-dependent and they are shaped by powerful interest groups in manners which may not achieve the optimal level of efficiency for the society. Their research findings include that European ownership structures are often inefficient which contradicts the findings of Demsetz and Lehn (1985). Shleifer and Vishny (1994) have argued that government-owned, or state control, is a separate category of ownership due to the fact that the government uses these companies to pursue political objectives while the citizens pay for the losses of such companies.

"Current European ownership structures are a function of the complex interaction of history, national regulation, strength of institutional investors and individual/family wealth preferences, constraints and psychology. The balancing of these interests through the political process at country level has been a prime determinant of current corporate structures… These structures are far from efficient… Europe may create significant value from changing its ownership structures." (Kirchmaier & Grant, 2005)

	Dispersed Ownership	Dominant Ownership	Family-Owned	Foreign-Owned	Cooperative	Government-Owned
Austria	0	7	25	38	10	20
Belgium	4	20	6	61	3	6
Denmark	10	9	30	23	17	11
Finland	12	25	23	11	10	19
France	16	28	15	16	3	22
Germany	9	30	26	22	3	10
Great Britain	61	11	6	18	1	3
Italy	0	22	20	29	0	29
Netherlands	23	16	7	34	13	7
Norway	6	14	29	19	19	13
Spain	6	22	8	45	5	14
Sweden	4	31	18	14	12	21

Table 1. *Ownership of the hundred largest companies in twelve European nations by Pedersen & Thomsen (1997).*

There is a major nation effect, meaning nations differ in their ownership structures significantly and the appearing differences may be explained by historical, institutional and geographical differences between countries affecting their economic development over time (Pedersen & Thomsen, 1997). Pedersen and Thomsen (1997) argued that Finland's late industrialization may explain why the government has been given a larger role especially in forest products to play catch up with other countries economic development. Their study also found out that the industry that the company in question operates in has a significant effect over ownership structure – for an example government playing a larger role in public services such as electricity production and airlines.

Bolton and Von Thadden (1998a) found there to be little variation across countries in the capital structure of small companies, however the problem of inducing more effective investor control for large companies has been solved very differently across nations. They provide examples from the United States and the United Kingdom, where ownership is widely dispersed, turnover is high and investor control is exerted through the threat of takeovers, contrasting with practices in such as Germany, France and Japan where own-

ership is more concentrated, turnover is lower and investor control is exerted by the largest shareholders and debtholders. Fundamental question regarding ownership concentration is, whether it is best to have a large block shareholder continuously exert control over the management or alternatively have diffuse ownership and rely on market forces to intervene in managerial decision-making by creating ownership concentration whenever such intervention is deemed necessary by the market participants. (Bolton & Von Thadden, 1998a.)

2.2 Implications on performance and value

Berle and Means (1932) argued that there is a potential conflict of interest between corporate managers and dispersed shareholders when managers do not have an ownership interest in the company. According to McConnell and Servaes (1990), corporate value is a function of the structure of equity ownership and their results suggest that institutional ownership "reinforces the positive effect of insider ownership on corporate value". They did not find a significant relation between corporate performance and a single, dominant shareholder. Demsetz and Villalonga (2001) found no evidence to support the hypothesis that differences in ownership structure result in systematic variations in observed companies' performances. Their findings support the narrative that the market is successful in bringing forth ownership structures, which are appropriate to the firms that they serve – ownership structures vary with the company and market dynamics, particularly in regard to regulation, scale of economies and the environment that the company operates in. The study of Bethel and Liebeskind (1993) also found no relation between insider ownership and company value.

Cho (1998) found evidence that company value affects ownership structure but not vice versa. This calls into question whether ownership structure is exogenously determined, which has been an assumption used in some studies. Cho (1998) also found a significant relation between insider ownership and company value. Thomsen and Pedersen (2000) found that in large European companies the relationship between ownership concentration and economic performance is nonlinear and as ownership concentration grows beyond a certain level it will lead into entrenchment and this has adverse effects on company performance. Pedersen and Thomsen (1997) concluded in their other paper that there is a significant nation effect in corporate ownership and they partly explained it with institutional differences between countries.

Coffee (1991) argued that large blocks are necessarily illiquid due to the fact that an attempt to sell a large block of shares would be perceived in the marketplace as a signal that the seller possesses adverse information. Zeckhauser and Pound (1990) also argued that the liquidity of ownership does effect time preferences of owners while larger owners can not necessarily sell their shares at market prices due to their selling behavior affecting the share prices. Often real, yet small, discounts to market value in large block trades support the argumentation by Coffee, Zeckhauser and Pound. Bolton and Von Thadden

(1998b) described issues with the build-up and dismantling of large blocks of ownership as the disclosure requirements for crossing critical ownership thresholds, often 5 and 10 %, may be different for building and dismantling such blocks. Another major factor to take into account, especially when examining European companies where government plays a larger role as an owner of equities than in the US, was brought up by Shepherd (1989): The identity of the owners influences the priorities of the companies in question – for an example companies owned by the government will be expected to follow political objectives instead of private objectives, supported by Shleifer and Vishny (1994). Often social goals and shareholder value maximization goals will be very different from each other, sometimes being complete opposites.

Gompers and Metrick (2001) found that the level of institutional ownership in an equity can help forecast the respective equity's rate of return and the predictive power is the result from demand shocks resulting from the compositional shift in ownership from individuals towards institutions. They found that the abovementioned compositional shift results in higher demand for larger market capitalization companies, which results in higher prices, and lower demand for smaller market capitalization companies, resulting in lower prices. This trend was observed by Gompers and Metrick (2001) in the US stock market and could be extended to other markets if the shift towards concentration in institutional ownership is similar in other markets. Research by Erenburg et al. (2016) found that activist pension funds' shareholdings, to the contrary of the Gompers and Metrick (2001) research, are negatively correlated with subsequent company performance.

Erenburg et al. (2016) found evidence that supports the view that institutional investors' threat to sell can align managerial incentives with those of the equity holders, or stockholders. They found that institutional short-term holdings contrast with long-term holdings in that they are negatively related to failure and positively related to subsequent performance which they state as an indication of the important monitoring role that institutions, which trade actively, possess. In their data they found that high long-term ownership was negatively associated with subsequent failure while it is not significantly related to acquisition or any of their performance metrics. (Erenburg et al. 2016.)

Shleifer and Vishny (1997) describe a fundamental problem that arises from controlling or dominant shareholders: the large investors represent their own interests which may differ from those of other investors, company managers and employees enabling them to redistribute wealth in efficient and inefficient ways from the others. Therefore a controlling shareholder may in selected cases actually become a hindrance to company performance and value creation for other shareholders. Kirchmaier and Grant (2005) expressed that Europe's equities could create value via optimization of companies' ownership structures. Examples of behavior where insiders may divert funds were discussed by Shleifer and Vishny in their 1997 paper as outright theft, dilution of other shareholders through share issues to insiders, excessive salaries, sales of company assets to themselves or com-

panies owned by the insiders. Bae et al. (2002) reported such behavior in Korean companies, where insiders have benefited from below-market price share issues at the cost of minority shareholders. Contrasting the above evidence, the analysis of Shleifer and Vishny (1986) found that large shareholders increase expected profits and this effect is correlated with the size of the ownership, however large shareholders may be hard for the company to keep. Integrity of large shareholders is next to impossible to research – the abovementioned papers obviously compare large shareholders with improper and proper integrity, respectively. Daily and Dollinger (1992) and Kang (2000) have suggested that family firms represent one of the most effective solutions to the agency problem in organizational governance. On the other hand family firms present another potential issue where family insiders might divert company resources or assets from their most efficient use causing the outside shareholders excessive expense while providing private benefits to the family insiders (Bae et al. 2002, Gao & Kling, 2008).

"The directors of such (joint-stock) companies, however, being the managers rather of other people's money than of their own, it cannot be well expected, that they should watch over it with the same anxious vigilance with which the partners in a private co-partnery frequently watch their own. Like the stewards of a rich man, the have apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company."

-Adam Smith, the Wealth of Nations (1776)

Ang, Cole and Lin (2000) described agency costs arising from the failure to align the interests of the company managers with the shareholders in practice as on-the-job perks, shirking and making self-interested and entrenched decisions that reduce shareholder wealth. Agency costs are defined by Jensen and Meckling (1976) as follows:

i. Monitoring expenses by the principal
ii. Bonding expenses by the agent
iii. Residual loss,

Where residual loss is defined as the dollar equivalent of loss in welfare experienced by the principal due to the fact that the agent's final decisions diverge from the optimal decisions in the perspective of the principal's welfare maximization. Jensen and Meckling (1976) concluded that agency costs are true costs (which will always hinder a company's performance) and although public companies have shortcomings, "the corporation has thus far survived the market test against potential alternatives".

Research by Ang, Cole and Lin (2000) provide supporting evidence to the prediction by Jensen and Meckling (1976) that agency costs are higher in companies with less than 10

percent manager ownership and the costs increase when the manager ownership decreases. Ang, An and Zhang (2013) stated that institutional monitoring limits managers' extraction of the company's cash flows, thereby reducing agency costs and company-specific risk. Cole and Lin (2000) studied small, non-public companies and their other findings related to agency costs were:

i. They are significantly higher in companies where an outsider manages the company compared to one where an insider has control
ii. Agency costs are inversely related to the manager's ownership stake
iii. Agency costs increase with the number of non-manager shareholders
iv. Agency costs are lower when greater monitoring by banks is present

Lemmon and Lins (2003) estimated that the cumulative stock returns during crisis period of companies, in which managers have high levels of control and have separated their control from cash flow ownership, are 10 to 20 percentage points lower than those of other firms. Higher long-run underperformance of bidder companies, in case of takeovers, are associated with short-term institutional shareholder ownership according to Gaspar, Massa & Matos research (2005). According to the research of Bethel and Liebeskind (1993) there exists reasonable evidence that institutional owners support the managerial goal of growth instead of the shareholders' goal of maximizing value. Cho (1998) found that investment affects company value, which affects ownership structure but the reverse was found to be not true – therefore ownership might not be an effective incentive for inducing managers to pursue value-maximizing decision-making in company investments. This casts doubt whether stock grants and option grants provide executives with strong incentives to make decisions that maximize shareholder value (Cho, 1998).

A tendency for value loss resulting from increased diversification was found by Amihud and Lev (1999) while more focused companies tend to increase company value more so than diversified companies. They found evidence that diversifying mergers and acquisitions reduce shareholder value. They stated that the this diversification strategy is one of the detrimental effects caused by agency problems, which will be discussed more in Chapter 2.3. Research of bidder companies in case of mergers have shown that the long-term performance of bidders are on average non-positive and the non-positive returns are primarily seen in acquisitions that are paid in stock, contrary to cash and debt, and in the case of glamour acquirers (Gaspar et al. 2005).

If the identity of the controlling shareholder has an affect on company objectives and strategy (Thomsen & Pedersen, 2000), a following hypothesis could be constructed: Ownership structure, especially the identity of the controlling or dominating shareholder group, will affect companies' strategic objectives and decisions resulting in differences in rates of growth and profitability. The aforementioned will ultimately be reflected in company performance and value across different types of controlling or dominating shareholder groups.

2.3 Implications on management and strategy

Shleifer and Vishny (1986) argue that large shareholders perform the task of monitoring the management and looking for ways to improve the company. According to Thomsen and Pedersen (2000) top management has a personal interest in diversification at the company level due to risk aversion related to employment, expense preference and empire building, a well-studied phenomenon in top management behavior. They argue that the identities of power-wielding shareholders have implications for their objectives and therefore affect the way in which they exercise their power reflecting into the company and its strategic decisions relating to profit goals, dividends, capital structure and growth rates. According to economic theory (Fama & Jensen, 1983) the liquidity of ownership affects corporate investment due to differing time preferences of the owners. Amihud and Lev (1999) outline ways for shareholders to align the managers incentives better with those of the shareholders by performance-based incentive pay and options which should increase the managers' propensity to take risks, counteracting the risk aversion described by Thomsen and Pedersen (2000). Lane, Cannella and Lubatkin (1998) challenge the research of Amihud and Lev and various agency theory researchers with their study finding no evidence that agency theory would extend to the strategic behaviors of management.

"*In well functioning markets, competition drives the efficient redeployment of assets." (*Erenburg et al. 2016)

According to Shleifer and Vishny (1986) monitoring shareholders have an opportunity to improve the company's operating strategy and sometimes they must replace the current management in order to maximize profits and value. This threat to incumbents should provide incentive(s) for the management to pursue strategies in the shareholders' interests. Bethel and Liebeskind (1993) found evidence that *when the need for restructuring arises*, large blockholders play a major role in monitoring and influencing company strategy in cases where the management is reluctant to the idea of restructuring. An and Zhang (2013) found that transient institutional investors' ownership stake are positively related to stock price synchronicity and crash risk, while the contrary relation for both was found for dedicated institutional investors. They explained the latter by dedicated institutional investors' strong incentives for monitoring due to large ownership stakes and long investment horizons and the former by the tendency of transient institutional investors to trade rather than monitor. An and Zhang (2013) further added, that institutional monitoring reduces crash risk by mitigating managerial bad-news hoarding, which can result in stock price crashes when an amount of accumulated bad news is finally released to the shareholders as a whole.

A survey conducted by Graves and Waddock (1990) in 1987 to 400 chief executives in the US suggested that CEOs feel short-term pressure from institutions and the CEOs have a belief that due to the pressure various industries are taking a short-view on developing

their strategies. In the survey, 58 percent responded that institutional owners were one of the principal sources of short-term performance pressure, while 70 percent responded positively when asked if their industries were justifiably criticized for focusing on tomorrow's stock price or next quarter's earnings. In terms of institutional owners' influence and changes in it during the past 5 years 98 percent of the executives responded that institutions had either gained or kept their influence. (Graves & Waddock, 1990)

Hill and Snell (1989) state that companies acting in the interests of shareholders should be characterized by a greater efficiency than companies acting to maximize management utility. In the case of the company management not being shareholder-oriented and instead focused on its own utility this fact should be reflected in decision-making and strategy resulting in suboptimal company performance and value. Bethel and Liebeskind (1993) found support for the conclusion of Hill and Snell that "ownership concentration is associated with more efficient strategies and higher firm performance". Hill and Snell (1989) further elaborate that in the case of concentrated ownership, information asymmetries are low while the ability of stockholders to remove a management team is high resulting in the company management being likely to feel constrained to put into action strategies that are in the owners' interests. Large positions in companies by institutional funds might be hard to get out of, where changing the management might provide an alternative for a dissatisfied owner (Graves & Waddock, 1990).

"Ownership represents a source of power that can be used either to support or oppose management, depending on how it is concentrated and used. In general, the more concentrated ownership is the more potent potential support or opposition." (Salancik & Pfeffer, 1980)

The hypothesis of Thomsen and Pedersen (2000) that concentrated ownership could counteract company diversification and actually increase shareholder value has some support from Amihud & Lev (1981) who found that companies which have controlling, large block shareholders are less likely to engage in unrelated (value-reducing) mergers and acquisitions. This type of M&A activity can be related to diversification and empire-building. Findings by Gaspar et al. (2005) show that weak monitoring by short-term shareholders may allow managers to proceed in value-reducing acquisitions or to bargain for personal benefits (job security, empire building) at the cost of the shareholders. They also show that long-term shareholders have larger incentives to monitor management resulting in a lower probability of managers to trade off shareholder returns for their own personal benefits.

Hill and Snell (1989) theorized that the owners seek to maximize their return on investment and in doing so, it is most efficient to maximize the efficiency of the company and oppose strategies that are perceived to have a detrimental effect on efficiency. Erenburg et al. (2016) suggested that large blockholders might encourage economic efficiency as they found institutional blockholdings to be positively correlated with the probability of

underperformers being acquired and to be negatively correlated with the probability of overperformers being acquired. Contrary to the former efficiency statement, Erenburg et al. (2016) also found that institutional blockholdings are positively correlated with subsequent failure of underperformers. Large block shareholder ownership has been found (Hoskisson et al. 1994) to be negatively related to product diversification. Denis et al. (1997) found that agency problems are, in fact, responsible for companies maintaining value-reducing diversification strategies. Amihud and Lev (1999) presented evidence that companies with a greater concentration of ownership tend to be less diversified. Hoskisson et al. (2002) found that public pension funds had a tendency to prefer internal innovation where professional investment funds' managers tended to prefer external innovation by acquisitions. They had a similar finding in terms of boards of directors where insiders with equity preferred internal innovation while outsiders with equity preferred external innovation.

Research by Denis et al. (1997) found multiple sources of evidence for agency costs and two of their principal findings were that "there is a strong relation between the extent of diversification and managerial equity ownership" and "there is a weak negative relation between the value loss from diversification and managerial ownership". The research of Bethel and Liebeskind (1993) found no relation between insider ownership and company value.

Amihud and Lev (1999) concluded that the involvement of institutional investors and the composition of the board of directors reduce agency costs related to the separation of control and ownership. Useem (1996) has suggested that the managerial opportunism predicted by agency theory has been reduced by ownership activism. David, Hitt and Gimeno (2001) studied the role of institutional investors in influencing company R&D and concluded that pension funds perform more ownership activism activities than professional investment funds and this activism is related to an increased level of R&D investments. Hill and Snell (1989) found evidence that in companies with diffuse ownership the management engaged in more unrelated diversification efforts and spent less on research and development opposed to the case when the stockholdings were not diffuse. Their research findings included a positive relationship between stock concentration and productivity, measured in value added per employee. A negative relationship between institutional ownership and R&D investments has been found by Graves (1988). This contrast with longitudinal research that has found support for a positive relationship between institutional ownership and company investments in internal innovation (Baysingewr, Kosnik & Turk 1991; Hansen & Hill, 1991; Kochhar & David, 1996).

According to Lemmon and Lins (2003) managers who are stockholders have a greater incentive to invest resources within the company into positive NPV projects as they have the opportunity to participate in greater future cash flows of the company in proportion to their ownership stake in the company. They conclude that ownership structure is an

important factor in determining the incentives for the insiders to expropriate minority shareholders in times of declining investment opportunities.

The trend towards increased corporate focus, or focus on core competence(s), that continues to this day evident in many companies' managements' statements, was attributed to market disciplinary forces in Denis et al. (1997) research. These market disciplinary forces were described as acquisition attempts, financial distress, management turnover and share block purchases. Hill and Snell (1989) concluded that top managements have a tendency to prefer strategies that increase company size and reduce risk at the expense of efficiency as this enables them to maximize utility in terms of remuneration, power, security and status as the main characteristics of management utility. Amihud and Lev (1999) concluded that in general that increased corporate focus tends to be value-increasing while diversification tends to result in value loss. Research by Gaspar et al. (2005) (will be described in more detail in Chapter 3.1) showed that investors' investment horizon has implications for management actions especially in M&A related costs and decision-making. Different investor groups investment horizons and the related characteristics will be further discussed in Chapters 3.1 and 3.2.

3. INVESTOR TYPES AND CHARACTERISTICS IN LITERATURE

This chapter introduces different types of investors acting in the marketplace and the characteristics associated with the different types. Study of the area's literature will provide a breakdown into two major sets of investors, institutional and household investors. The former will be the focus of Chapter 3.1 while the latter will be the focus of Chapter 3.2. These two categories might as well be described as the professional and non-professional investors.

First the investor types will be introduced with their varying characteristics and subcategories. Next a thorough literature review will show definitive differences between the two types. The different incentives of the investor types will result in differences in behavior in the marketplace. Most of the literature will be based on research done in the United States. Special characteristics of the Finnish market and the investors in it will also be presented.

Institutional investors play a large role in the stock market as they control enormous amounts of investment assets and therefore may exert control to a large extent over companies' management. Edwards and Hubbard (2000) reported that institutional investors controlled over 56 % of outstanding shares in all US exchanges, therefore making ownership's preferences very relevant via increased shareholder activism (Hoskisson et al., 2002). An and Zhang (2013) reported that institutional investors owned 78.5 percent of all common equity in the US market as of 2007. Household investors are less unified as a group in terms of proxy voting due to the smaller amount of shares owned by each investors compared to institutional investors while they still do exert control with respect to their shareholdings. This is especially true in countries like Finland where the majority of public companies respect the one-share one-vote rule.

Household finance research is inspiring due to the fact that improved decision-making by households might prove to be a way to greater welfare in both developed and developing economies. John Maynard Keynes (1934) had the foresight to propose that in the future economists might be "thought as humble, competent people, on a level with dentists." Dentists in developed economies spend a great amount of their working hours giving advice to patients in order to improve their oral hygiene –financial planners and private bankers should aspire to improve their clients' financial literacy and decision-making while economists should be able to design advice and innovations to improve households' financial hygiene.

"There is one important caveat to the notion that we live in a new economy, and that is human psychology… which appears to be essentially immutable." Alan Greenspan, former chair of the US Federal Reserve, September 4th 1998

Kaustia, Alho & Puttonen (2008) researched the anchoring effect, introduced to science by Tversky and Kahneman (1974), in university students and financial market professionals and they found a very large anchoring effect in the university students long-term stock market return expectations. A similar, statistically significant, however smaller, effect was found on the professionals even when controlling for experience. Professionals in the study were not conscious about the impact the past returns had on their expectations of future returns. The study concluded that expertise does indeed significantly attenuate behavioral biases although there are limits to debiasing. (Kaustia et al. 2008)

"The willingness to bet on an uncertain event depends not only on the estimated likelihood of that event and the precision of that estimate; it also depends on one's general knowledge or understanding of the relevant context." Competence hypothesis by Heath and Tversky, 1991.

Heath and Tversky (1991) stated in their paper the following: "People prefer to bet in a context where they consider themselves knowledgeable or competent than in a context where they feel ignorant or uniformed," providing additional light on their competence hypothesis stated above this paragraph. They concluded the same paper with the following remarks: " Competence hypothesis might also help explain why investors are sometimes willing to forego the advantage of diversification and concentrate on a small number of companies with which they are presumably familiar." (Heath & Tversky, 1991)

Feng and Seasholes (2005) found that both investor trading experience and sophistication help with removing behavioral biases related to the *disposition effect* as follows:

- The reference price plays an economically and statistically significant role in sell versus hold decisions in equities
- Sophistication and trading experience eliminate the reluctance to realize losses
- Men are 30 percent more likely to realize losses than women
- Investors age 25-35 are 20 percent more likely to realize losses than investors over the age of 55
- Sophistication and trading experience reduce the propensity to realize gains by 37 percent (however they fail to eliminate this bias)
- As investor wealth increases, behavior consistent with traditional finance theory diminishes
- The more equity wealth an individual has, the less risk averse the individual tends to be and the tendency to realize losses increases

Grinblatt and Keloharju's (2001) research in Finland supports the findings of Feng and Seasholes in terms of reference price playing a significant role in hold versus sell decisions. Feng & Seasholes used Grinblatt and Keloharju's research methods while extending them to a data set of Chinese individual investors. Huberman (2001) researched American investors and found compelling evidence that familiarity breeds investment in both private and institutional investors as by and large the investors' money stays within the country they inhabit. This can be seen in investment and saving rates in different countries, where they match each other rather closely (Feldstein & Horikoka, 1980). Huberman (2001) explained that the home country bias is a simple preference by people to invest in the familiar, 'root for the home team' and feel comfortable in purchasing equity in businesses that are visible to them. Another reason for such investment behavior could be reduced monitoring and search costs associated with nearby companies or exploitation of private information through relationships with company executives (Coval & Moskowitz, 2001).

The tendency, to invest in one's home country, is in stark contrast to portfolio theory and leads to non-optimal diversification and sub-optimal levels of investment in stocks abroad. Baik et al. (2010) found that the level and the change of local institutional ownership predict future returns of a company, evidence that local investors indeed do have an advantage over non-local investors. Giofre (2013) studied individual and institutional investors in France, Italy, Spain and Sweden and found evidence that households' portfolio investments are influenced more by proximity variables than those of institutional investors, other affecting variables being the transparency of the destination stock market and the presence of Euronext, a common stock exchange market. Coval & Moskowitz (1999) found supporting evidence for Huberman's home country bias while extending it to locality within the US and they suggested that information asymmetries might be one of the drivers of observed preference for geographically proximate companies. In their another paper Coval & Moskowitz (2001) found that equity ownership level of nearby investors is positively correlated with the equity's future returns, supporting their earlier claim of information asymmetries via abnormal returns earned by local professional investors. They wondered whether it would actually be optimal for mutual funds to be have even more focus in their portfolios on their local companies as these investments have a tendency to provide abnormal returns. Heath and Tversky's (1991) competence hypothesis does support Coval and Moskowitz's findings and could be considered a necessary assumption if one is to to conclude that mutual fund managers, or professional asset managers in general, provide a service of value to the ultimate investors. Baik et al. (2010) concluded by suggesting that local institutional investors and investment advisers have informational advantages over non-local investors and the exploitation of the former results in excess returns.

French and Poterba (1991) have estimated that US, Japanese, UK investors hold 93, 98 and 82 percent of their portfolios, respectively, in their home equity markets and they

argue that these statistics are not consistent with standard models of asset allocation. Huberman (2001) states that a favourable view of equities that the investors has an affinity tends to increase wishful thinking, whether the investor has a stake in the companies or not. He continues that it seems like people tend to look favourably upon equities the investors are familiar with and have a belief that these familiar equities are more likely to deliver higher returns while exhibiting lower equity-specific risks. Huberman (2001) concludes that the former tilts investors' portfolios toward familiar stocks and investors thus fail to optimize along objective risk-return trade-offs.

Barber and Ocean (1999) have identified two common mistakes made by investors, excessive trading and a tendency to hold on to losers while selling winners and they asserted that these are a result of systematic irrationality of investors, being proponents of behavioral finance. According to them, overconfidence biases investors into trading too often and the human desire to avoid regret prompts investors into keeping past losers while selling past winners. Grinblatt and Keloharju (2001) reported that the tendency to holding past losers is increased for all investors types in cases where the losses exceed 30 % of the value of the investment. Behaviors described by Barber and Ocean (1999) may result in market inefficiencies as investors refraining from selling losers might slow down the speed at which negative news are translated into equity prices and on the other hand the tendency to buy equities with recent extreme performance cause recent winners' equity prices to balloon beyond their true value. They do offer a condition that in order for these biases to have an effect on asset prices, they must be systematic and investors must be willing to act on them.

In their article Barber and Ocean (1999) predict that bull markets, characterized by increasing equity values, would increase trading volumes due to the two tendencies outlined in the former paragraph. Positive returns fuel the investors' overconfidence leading to ever increasing volumes of trading during bull markets where most investors are successful in generating returns without any regard to the investors' sophistication, expertise, insight or lack of these. Heath and Tversky (1999) proposed that competence or expertise helps individuals in taking credit when they are successful and sometimes helps them by providing protection against blame when they fail. Statman et al. (2004) found supporting evidence for the prediction as their research indicated that current market returns predict subsequent trading volume over even short horizons, such as a month, which is definitely a shorter time frame than is required in order for investors and analysts to call the market a bull market. They attributed this finding to investors' overconfidence and the effect was stronger in small-cap stocks where individuals' ownership were large.

Liu et al. (2016) found that both individual and institutional investors express more overconfidence in trading behavior during high market return regimes than low market return regimes and the during the former, individual investors trade with more overconfidence than institutional investors. Their findings support behavioral finance theory in that higher overconfident trading leads to higher return volatilities. Thorley and Vorkink (2004) the

economic significance of high market returns may be substantial for market-makers such as brokers and specialists, whose economic logic is based on commissions, – for an example a high monthly return of 7 % might result in a full 'extra month' in trading volumes over the next 6 month period compared to a -5 % monthly return.

Grinblatt and Keloharju (2001) asserted that contrarian behavior in investing is exhibited the most by the following investor groups: households, government and non-profit institutions. Domestic companies, including financial and insurance companies, tend to exhibit less contrarian behavior when assessing recent stock price run-ups and are on average more sophisticated than the three abovementioned investor groups. Lastly they argue that foreign investors are the most sophisticated and tend to exhibit the most momentum strategies with respect to past returns. In practice and in their data these strategies showed up as tendencies of foreigners buying stocks at their monthly highs while domestic investors had an inclination to sell at monthly highs and buy at monthly lows.

Odean (1998) studied household investors (10 000 accounts at a large discount brokerage) in the US and found that investors have a tendency to sell past winners instead of past losers and in doing so effectively engage in contrarian strategies. Dhar and Kumar (2001) studied investors in the US marketplace as well, finding evidence for both momentum and contrarian strategies being apparent in their data. They found strong evidence for contrarian strategies that were guided by the stocks' monthly lows and highs. Grinblatt et al. (1995) found evidence that institutional investors, in their study being focused on mutual funds, exhibit momentum strategies and have a tendency for herding, buying or selling the same stocks at the same time. They found that the 77 percent of mutual funds that exhibited momentum strategies tended to outperform the other funds and the momentum trading was most evident in buying behavior, which in practice meant buying past winners.

3.1 Institutional investors

Institutional investors are the major players in the financial markets and the majority of trading volume is attributed to them while household investors constitute a small fraction of the trading volume (Basak & Pavlova, 2013). Fernando et al. (2014) found evidence that institutional investors tend to avoid investing in family-controlled firms. Ruiz (2018) conducted research over institutional investors' effect on economic growth in industrialized nations finding that institutional investors have a positive effect on economic growth via GDP per capita measure. Therefore he suggests that industrialized nations should enact friendly policies to institutional investors, providing good incentives and regulations in order to attract institutional investors to the respective nation as this should result in higher economic growth.

Davis and Steil (2001) broke down institutional investors as a group into three subgroups; insurance companies, pension funds and mutual funds. Insurance companies invest their

customers prepaid premiums, also known as float, while pension funds invest workers' money in order to finance their future retirement. Mutual funds invest other institutions' and households' capital in order to gain a fair return, essentially providing investing as a service.

Davis and Steil (2001) described a major difference between banks and institutional investors by concluding that banks tend to rely on private information in their investment and/or lending decision-making while institutional investors rely on public information. Institutions and households may realize a positive externality arising from bank monitoring according to Ang et al. (2001) as bank monitoring tends to increase efficiency and thus, lower agency costs. Institutional investors have many advantages over household investors due to economies of scale – lower commission rates on trades and smaller cost for investment advisory/management fees. Other advantages due to large size may be higher level of control over the company, possibly in the form of seat(s) in the companies' boards of directors, more votes on companies' propositions and better access to management. (Davis & Steil, 2001.)

Keloharju et al. (2012) study's results suggest that institutional investors invest more in money market funds, bond funds and other funds than individual investors while investing much less in balanced funds. Their research also compared institutional investors' portfolios with other groups finding them to be the most similar with portfolios of wealthy individuals and those with a graduate or business degree. Basak and Pavlova (2013) found that institutions have a tendency to tilt their portfolios towards stocks that are in their benchmark index, the index that their returns are compared to, also called 'closet-indexing'. Their finding has implications for the indices used as benchmarks and they found that this behavior indeed boosts index stocks' prices and results in excess correlation between the stocks that are included in the respective index. Barber and Ocean (2000) concluded in their study that institutional investors have a clear preference for large stock. In a more recent study Barber and Ocean (2008) found that the buying behavior of professionals is least influenced by attention. They further argued in their research that professionals buying and selling behavior are much more alike each other than those of individual investors due to the fact that a large part of the professionals take both long and short positions contrary to individual investors and also in search of stocks to sell professionals' portfolios tend to have a larger set of different equities in effect giving more sell opportunities even if they do not engage in short-selling.

Rantapuska and Knüpfer (2008) researched the Finnish market and different market participants' action in the marketplace. Their study concentrated on rights' issues and which investors left money on the table during the respective events. They found that financial institutions, with large portfolio and high rates of trading activity, take advantage of the less savvy investors during rights' issues by purchasing subscription rights at depressed price levels. Siikanen et al. (2016) found that Facebook activity has no effect on institutional investors' investment decisions, contrary to those of individual retail investors.

Basak and Pavlova (2013) suggested that the presence of institutions as owners of equity might generate momentum of stock returns. Momentum strategies, exercised by institutions especially, are further explained in the following paragraph.

Grinblatt and Keloharju (2000) studied the investment behavior and performance of different investor types in the Finnish market with significant results as follows: Foreign investors are the most sophisticated investor group in the Finnish market and they tend to pursue momentum-strategies, buying past winners and selling past losers (winners and losers determined by the past 6 month returns) while Finnish investors, especially households, exhibit contrarian investment styles buying past losers and selling past winners. In another paper, studying what makes investors trade Grinblatt and Keloharju (2001) found that an investor's strategy, whether contrarian or momentum-based is exacerbated by the stock price being at either a monthly high or a monthly low. They found that the degree of contrarianism was inversely related to the degree of sophistication of the investor and 6-month returns were positively related with investor sophistication. As a result, foreign investors had the best performance over 6-month periods, households the worst with domestic institutions in the middle. (Grinblatt & Keloharju, 2000.)

El-Gazzar (1998) has found a negative association between the level of institutional holdings in a company and the company stock's volatility while Potter (1992) documented the contrary, finding a positive association between the two variables. According to Bushee and Noe (2000) different types of institutional investors have different effects on equity volatility – transient institutions with short-term investment horizons increasing volatility while quasi-indexers with long-term investment horizons decreasing volatility. Basak and Pavlova (2013) found that institutions amplify the volatility of stocks represented in their benchmark index as well as aggregate stock market volatility. Gabaix et al. (2006) presented a theory that very large institutions cause excess volatility due to the size of their trades, generating significant spikes in volume and returns despite the lack of news regarding the equities' fundamentals.

Sias (1996) studied institutional investors, institutional ownership and volatility and found evidence that an increase in institutional holdings in a company induces an increase in the volatility of the stock, which is inconsistent with most academic theories predictions. One of his hypotheses was that securities that have higher volatilities attract institutional investors, which his study proved to be a false hypothesis. Institutional investors tend to trade in higher volumes than individual investors and tend to exploit more program trading, both of which Sias suggests as potential reasons for the increase in volatility induced by an increase in institutional ownership. His research supports the findings that larger capitalization companies tend to have larger relative ownership by institutions. (Sias, 1996.)

Graves and Waddock (1990) found that increasing levels of institutional ownership commonly correlate with higher turnover rates in the market and shorter holding time periods.

From 1965 to 1985 the annual turnover rate went from 16 to 54 percent while the market changed from being dominated by individual investors into being dominated by institutional investors. Poterba et al. (1995) studied stock ownership patterns with data from 1962, -83 and -92 and found that there is a significant trend towards an increase in indirect stock ownership via mutual funds, thrift plans and pension funds.

Hoskisson et al. (2002) state that pension fund managers differ from other investment professionals in that they do not feel pressure for immediate returns as a result of different characteristics of 1) their ultimate investors' (=pensioners) long time horizons and 2) compensation. Due to pension funds' broad and diversified portfolios, in many jurisdictions mandated by law, the funds often prefer indexing over regular entries and exits into different investment products so their portfolios tend to have small turnover rates according to Gilson and Kraakman (1991).

Gaspar et al. (2005) outline that institutional investors have different portfolio time horizons for multiple reasons including different demographics of liquidity needs of the final owners. They argue that frequent capital inflows and outflows of some institutional investors such as open-ended mutual funds result in short-term investment horizons in contrast to the long-term investment horizons of employee pension funds. The predictability of capital inflows and outflows or lack of it has serious implications for fund managers. Another example of such difference in institutional investors' differences in investment time horizons was presented in Chapter 2.3 where Hoskisson et al. (2002) research found that professional investment funds preferred external innovation via acquisitions and pension funds preferring internal innovation, the former representing short-term focus while the latter representing long-term focus in terms of investing time horizons. Pension funds' dynamics provide a short-term incentive for the fund managers in the defined benefit system as follows: Employer contributions vary so when the fund manager does well in the market (growing the assets of the fund) the contribution by the employer decreases (Graves & Waddock, 1990). The study by Hoskisson et al. (2002) explained differences in investor groups' preferences of innovation type by variance in the investors' time horizons and incentive systems in place.

According to Gaspar et al. (2005) the institutional investors' investment horizon has multiple effects on companies engaging in mergers and acquisitions: Short-term investors in the target company increase the probability of a takeover and lower its cost while in the bidder the same investor group gives managers more leeway to engage in value-reducing acquisitions. Their research shows also that long-term investors defend managements from takeovers by making takeover bids more expensive and also prevent the management from overbidding and value-reducing acquisitions.

Gompers and Metrick (2001) found that large institutions, institutions with at least $100 million under management, almost doubled their share of the common stock market ownership in New York Stock Exchange from 1980 to 1996 and the largest 100 institutions'

ownership in the stock market increased from 19.0 to 37.1 percent over the same time period. They found that these institutions typically invest in different stocks than others – they prefer larger companies with more liquidity and relatively low returns over the past year and these preferences were stable over time. According to Gompers and Metrick this has resulted in the disappearance of the small-cap premium – from 1927 to 1979 small-cap stocks earned about a 4 percent premium annually over large-cap stocks and this trend has reversed after 1980 due to the above findings, increased demand for large-cap stocks resulting in higher prices and higher returns annually. (Gompers & Metrick, 2001.)

Coval and Moskowitz (1999) found through their research that investment managers in the US have a strong preference for locally headquartered companies in their domestic portfolios, exhibiting a similar trait to home country bias while extending to the local companies within the country and/or state as the companies are more familiar to the managers. In another study, Coval and Moskowitz (2001) found abnormal performance in locally held firms and they interpreted this as evidence that investors are more motivated to invest in nearby companies due to information advantages. These information advantages could perhaps be explained by more exposure to the companies' stakeholders including but not limited to employees, clients and suppliers.

Puttonen & Torstila (2003) researched risk management in Finnish pension funds, by surveys directed to pension funds, finding that the most used risk measurement being used is volatility, or beta in financial terms. They found that the majority of funds do not require risk-adjusted return reports from external fund managers and monthly portfolio performance is followed by most funds. Their survey found that fund managers are particularly concerned over equity price risks.

The fact that fund managers follow monthly portfolio performance might lead into short-term focus by the funds resulting in sub-optimal returns. Pension funds in Finland could gain better results by focusing more on long-term results by following longer term performance, for an example 5 or 10 year performances of the portfolios compared to the most used performance metric of monthly performance. The prevalence of short-term thinking can lead to suboptimal decision-making by fund managers, who have an incentive to protect their assets under management by focusing more on the short-term results of their investment portfolios. Beta as an indicator of risk might also given critique especially in the case of pension funds' risk management as their investment time horizon is by necessity decades, not months or years and therefore they could withstand way greater volatility than private fund managers if the volatility comes with greater expected returns. If one investor has the capability to withstand enormous volatility, that is the pension fund managers.

3.2 Household investors

Shum and Faig (2006) researched household finance utilizing a rich data set synthesized out of US consumer finance surveys through 1992-2001 time period, while exploring how to explain household stockholdings in public companies. They had important findings which are summarized below:

i. Stock ownership correlates positively with multiple factors including having sought financial advice, wealth, age and retirement savings,
ii. Stock ownership is negatively correlated with the willingness to perform non-fnancial investments in the future (own home or own business) and holdings of other risky assets, namely investments in private businesses,
iii. Factors increasing the likelihood of stock ownership were saving for 1) household purchases, 2) retirement and 3) education bills, contrary to saving for private business enterprise, which decreased the likelihood of stock ownership,
iv. Households in 2001 were more likely to to hold stocks than before as well as those who held stock were more likely to have a larger share of equities in their portfolios compared to earlier and
v. The two most popular equity allocations in retirement accounts and mutual funds are zero and 100 percent followed by approximately 50 percent

Campbell's (2006) findings support Shum and Faig's paper as according to his paper, education, income and wealth levels have strong positive effects on public equity participation. Barber and Ocean (2000) studied individual households' stock investments' performance via discount brokerage trading records and had multiple major findings:

i. An average household turns over 75 percent of its common stock portfolio every year – therefore households trade frequently,
ii. Households have a tendency for investing in small, high volatility (beta) stocks and there is a smaller tendency, yet it exists, for preferring value (high book value compared to market value) stocks and
iii. Trading costs are high, the average buy-and-sell trade of over $ 1,000 in nominal value costs three percent in commissions and one percent in bid-ask spread.

Barrot et al. (2016) performed a study on a 9-year time frame (2002-2010) of French investors in the European marketplace looking at individual investors trading behavior and performance while focusing on individual investors as a source of liquidity especially during a crisis. They found that individual investors provide liquidity to the stock market especially in the case institutional liquidity drying up, or the lack of such liquidity. In the paper they show that individual investors tend to earn great excess returns (40% annualized returns) over weeks, where the VIX was above the sample median (median value of 20 during the time frame) and exhibit higher risk-bearing capacity during crisis contrary to institutional investors. Their data showed that household investors in aggregate have a

contrarian investing strategy. In their data sample individual investors had an average holding period of over three hundred days, the excess returns are present for approximately 20 days (Kaniel et al. 2008), and for that reason the individual investors failed to gain the benefits from providing liquidity – also failing to earn excessive returns over the long-term due to trading too little contrary to the findings of Barber and Ocean (2000) of investors trading too frequently.

Kaniel et al. (2008) found supporting evidence for Barrot et al. (2016) claims of individual investors providing liquidity in order to meet the demand for immediate liquidity by institutional investors in NYSE stocks. Kaniel et al. (2008) paper found evidence that individual investors tend to buy stocks following declines in the previous month and sell following price increases, therefore exhibiting contrarian investment strategy characteristics. Their study findings included positive excess returns in the month following intense buying by individuals and, respectively, negative excess returns in the month following intense selling by individuals. In another paper Kaniel et al. (2012) found that individual investors in NYSE stocks trade using a contrarian strategy related to both, returns and news after earnings announcements. Also, they found that on and after earnings announcements dates individual investors intense buying behavior (selling) predicts large positive (negative) abnormal returns, half of which can be attributed to private information. In their paper Kaniel et al. (2012) suggested that individual investors may exploit private information (insider information) to a greater extent than institutional investors due to the great difference in size of the investor groups, their holdings and trades as well as the fact that individual investors are less constrained with respect to diversification requirements and short-selling. The smaller size of individual investors' stock positions reduces the risk of investigation into insider trading, which might encourage such behavior.

When studying individual and institutional investors behavior in the marketplace and the effect that attention and the news have on this behavior Barber and Ocean (2008) found that rational investors will more likely sell their past losers, in effect postponing capital gains taxes and behaviorally motivated investors are more likely to sell their past winners, in effect postponing the psychological feeling of regret associated with realizing a loss. This avoidance of selling losers (and selling winners too soon) in order to avoid regret was labeled the disposition effect by Shefrin and Statman (1985), extending Kahneman and Tversky's (1979) prospect theory, which Kahneman and Tversky were awarded a Nobel prize for. Barber and Ocean's (2008) research pointed that individual investors might focus more on the future returns of the stocks they purchase while putting more focus on past returns of the stocks they decide to liquidate, or sell. One tendency found to be true for individual investors in the data was that they are net-buyers on high-attention days and for stocks with very poor prior day performance (lowest 5%) the purchases outnumber sales by almost a multiple of two. (Barber & Ocean, 2008.)

Strong evidence has been found that investors have a preference for domestic equities (Heath & Tversky, 1991, French & Poterba, 1991, Feldstein & Horikoka, 1980 and Huberman, 2001). This conflicts with portfolio theory's advice to diversify (Huberman 2001) and may result in suboptimal results and higher risk portfolios. Huberman (2001) further extends that this behavior is consistent with home country bias and may be especially hazardous for individuals who invest a large proportion of their retirement savings in their employer's equity.

"The investor's chief problem – and even his worst enemy – is likely to be himself" –Benjamin Graham, author of Security Analysis & the Intelligent Investor

Barber and Ocean's (2000) research found that in gross terms households in aggregate outperformed the common US indices, however the net result lags the indices due to the high trading costs. Lastly, their results showed that households with high turnover rates underperformed households with low turnover rates of their portfolios. Campbell (2006) found that poorer and less educated households are more likely than better educated and wealthier households to commit investment mistakes. According to a later study by Barber and Ocean (2008) individual investors are more likely to buy attention-grabbing stocks than to sell them and when doing so, the authors offer an explanation that attention affects buying more than selling due to the fact that individual investors have a large universe to choose from while when making sell decisions they may only sell stocks that they own, assuming there is not short selling by the individual investors. The purchases that are based on attention, according to Barber and Ocean, could temporarily inflate a stock's price, which might over time lead to disappointing returns going forward. Their research concluded that the individual investors' preferences come into play only after attention has narrowed down the the choice set, stating that "when alternatives are many and search costs high, attention may affect choice more profoundly than preferences do".Even though individuals in todays market have similar access to information about stocks via computer searches and stock screening tools as institutional investors, individual investors on average are less likely to use such tools therefore giving attention a larger emphasis in their behavior in the market. (Barber and Ocean, 2008.)

Siikanen et al. (2016) found that Finnish household investors, especially passive and less sophisticated ones, may be biased by Facebook activity in investment decisions related to Nokia stock. They stated that as Facebook is not a regulated source of company information and therefore can be a source of biased information, which could result in suboptimal decision-making especially in the case of less sophisticated investors. Keloharju et al. (2012) have found that older investors are significantly more likely to invest in stocks than younger individuals. Keloharju et al. researched Finnish ownership of stocks and mutual funds for the time period from 2004 to 2008. Other tendencies that they've found in the Finnish market have been that:

i. Finnish speakers (1st language) have smaller portfolios than non-Finnish speakers,
ii. women tend to invest in less risky funds than men,
iii. 13 % of Finnish individuals own stocks and 16% mutual funds and 5% own both as of 2008, median stock portfolio being worth ~3,700 € and fund portfolio ~2,600 €,
iv. ownership of mutual funds is less concentrated than ownership of stocks and
v. the richest 1% of stockowners owned 49.3% of individuals' combined stock wealth and the richest 1% of fund owners owned 33.1% of individuals combined fund wealth.

The amount of Finnish investors found in Keloharju et al. study (2012) owning stocks and/or mutual funds was ~125,000 individuals in 2008 out of the population of ~5.4 million. The relatively small average sizes of the portfolios and number of individual investors compared to markets like the US result from the fact that the individuals' pension funds consisting of various investments including stocks are not regarded to be owned by the individual under the Finnish law, but rather the pension fund, an institutional investor, contrary to the American or Singaporean systems, or thrift plans, of 401(k)s and CPFs. According to Keloharju et al. (2012) age has a significant effect on the portfolio composition of Finnish investors, the younger investors having a tendency to prefer indirect investments through mutual funds. Mutual funds were introduced in the Finnish market in 1987 and began to gain popularity in the 1990s according to Keloharju et al. (2012) which might explain why younger investors tend to invest more in mutual funds than direct stocks while older investors might be reluctant to take advantage of the new financial innovation of mutual funds and/or used to the way of investing directly into stocks. Investment differences of French household investors in mutual funds and direct stock investments during crisis were highlighted by Barrot et al. (2016) as during the financial crisis individual investors increased their purchases of common stocks while selling out of their mutual fund positions – effectively taking more risk during times of uncertainty.

Rantapuska and Knüpfer (2008) found that investors with small portfolios, inactive trading history and investors who know neither official language of Finland and investors living abroad tend to leave the most money on the table during rights issues. Shum and Faig (2006) had found that household investors in the US had an increased share of their financial portfolios in equities in 2001 (this survey was done between May and December 2001) compared to the past decade, what makes this interesting is that the stock market had performed very poorly following the dot-com bubble, so actually individual households were bullish after the market crash acting as contrarians as a group. Campbell (2006) found evidence that some financial products involving a cross-subsidy from naïve household investors to sophisticated household investors and this may discourage welfare-improving financial innovation. Less than 10 percent of the stock positions in Feng and Seasholes (2005) data set were held for a longer time period than 50 days, representing the investment horizon of Chinese individual investors.

Polkovnichenko (2005) explains that one of the most persistent features in human decision-making is the variance in risk attitudes and this can not easily be dismissed as a motive for holding undiversified portfolios. His data does suggest that the idea of getting rich through a long shot appeals to household investors in a similar way that it appeals to lottery players, casino gamblers and subjects in experimental decision studies. Campbell (2006) researched households financial decision-making and found that certain households prefer to delegate financial decisions to professionals and in doing so may end up paying high fees to financial planners, mutual funds and banks. Pålsson (1996) researched the Swedish market's household investors risk aversion and the results suggest that risk aversion in household investors correlates with age only. Feng and Seasholes (2005) found that men and young investors are more likely to realize losses than women and older investors using a data set of Chinese individual investors.

Halko Kaustila & Alanko (2011) studied the gender effect in risky asset holdings finding many differences between the sexes and they are presented here: First, women are more risk averse in general and this extends to women in finance and wealthy private banking customers. Next, women take less risk in the stock market. The strongest predictor for the proportion of wealth invested in stocks was found to be a self-reported financial risk attitude. Lastly, gender effect in risky shares increases with age although the risk attitudes stay constant over the life cycle. When controlling for risk attitude, financial knowledge, education, income and wealth the gender effect becomes negative. (Halko, Kaustila & Alanko, 2011.)

4. RESEARCH DATA AND METHODOLOGY

4.1 Case selection

In order to gain insight into companies with varying ownership bases, a wide range of Finnish companies was selected for the study. Few companies were excluded from the study due to them being acquired during and after the research time period, Lemminkäinen being acquired by YIT and Pohjola Pankki being taken private by Osuuspankki. As a result of the selection process a set of seven companies ended up in the final version of the study. These companies have had and continue to have very different ownership structures from each other:

- A company with the Finnish government as the controlling shareholder
- A company with a single family as the controlling shareholder
- A company with non-profit associations as the controlling shareholders
- Diffusely owned companies

The case companies characteristics vary largely in market capitalization, shareholder amount, shareholder composition, revenues and net profits and geographic reach. These differences should present themselves in differing ownership structures. These differences were taken into account when choosing the case companies out of all the companies listed on Helsinki Stock Exchange as a variance in the companies' characteristics was deemed desirable. The case companies are listed as follows:

- Nokia
- Kone
- Sampo
- UPM-Kymmene
- Finnair
- Stockmann
- Saga Furs

4.2 Description of the data used in the study

The ownership data used in the study has been obtained from Euroclear for research purposes by TUT. By aggregating all stock transactions completed within the time frame of the study, aggregated portfolios for each investor group were constructed. The time frames for each company had little variance with the maximum time frame being 20 years and the minimum 11 years. The portfolios were constructed for the end of each month or

12 times every year. The data was very extensive with multiple variables which will be described next:

Investor type

- Financial/Insurance (later referred to as institutional investors)
- Non-Financial companies
- Non-Profit
- Rest-World
- General Government
- Households

Investor gender

- Male
- Female
- Other (institutions with no single decision-maker in charge of portfolio)

Investor age

- Birth decade

Eventually the majority of all stocks, exceptions being governments and non-profits as shareholders, have an identifiable private owner – public companies shareholdings' could be attributed to the company's shareholders in respect to their shareholdings. With this data set we are able to look at which entity is holding the stock and a view of the companies' ownership bases can be established.

The study was first performed while including nominee shareholdings and transactions, which was deemed inappropriate in terms of transparency. Therefore, a decision was made to exclude all nominee shareholdings and transactions from the data set. For many case companies, especially the large capitalization ones; Nokia, Kone, UPM-Kymmene and Sampo, this resulted in a major change in ownership structure as large, foreign investors have large shareholdings in these companies through nominee arrangements. This results in ownership structure charts that do not represent a 100 percent of the respective company's total amount of shares outstanding and therefore they do not represent corporate control in terms of voting power.

The majority of all stock holdings fall under Male and Other groups as pension fund managers as well as household investors are more often male than female (Keloharju et al. 2012). The majority of institutional owners gender being listed as male could be due to the fact that the financial industry and investing have historically been male-dominant fields of work.

Investor age is listed in the data with no more specificity than the birth decade, so that all all male household holdings, where the owner has been born between 1950 and 1959 will be listed under Male, Households & 1950 categories. The majority of all individual and institutional holdings have investor ages listed in the data set. The monthly constructed portfolios might distort the specific data points for an example in the case where a deceased person's estate's assets have been distributed. These changes that are impossible to interpret from the data resulted in the study not focusing on very specific and narrow groups and instead the focus was turned into major shareholder groups and changes in their shareholdings.

Birth decade, as a variable, was left out of the data analysis due to multiple reasons, the most important being the fact that some investors' identity could not be fully protected if such analysis was done. Gender as a variable was also left out of the data analysis as the data obtained was insufficient in quantity (available for less than 10 % of the shareholdings in the majority of cases) in order to use it in the study.

Regulators, such as SEC in the US or FIVA in Finland, enforce public companies to inform investors and the public about their business practices, financial information and major changes within the companies' business and industry, for an example new regulations and their effects on the business or M&A acitivities. One major source of information for this study has been official company reports, which are mandatory to issue by FIVA in Finland. Multiple case companies have more than one share class and therefore the data analysis is performed specifically on a single share. This share class is pointed out for each company, where applicable.

When looking at the analysis, one must consider that there are sources of error including events, where for an example, a certain owner reallocates his ownership in a form of a charitable gift from private (household) to a charitable organization (non-profit) or another person, often the previous owner's child or kin. All equity issues have been accounted for in the data and equity issues often shake up the ownership base – hardly ever does the ownership base stay constant after an equity issue when raising capital. These events can result in large jumps and drops in shareholdings of an investor group as a percentage of the total shares outstanding. Good examples of this are explained in Sampo (4.4.3), where both, a merger agreement and a reorganization of an owner's shareholdings shook up the shareholder base in a substantial way.

Given the extensive data set, long time frame and limitations of the data (described above) it was deemed appropriate to search for long-term trends in ownership base change. The data has been refined over the years since it was obtained by TUT and is of high quality for the time frames and companies. After deliberation a decision was made to utilize monthly changes in ownership and closing prices at the end of the months.

Price data for the selected companies has been obtained from Nasdaq Nordic. Due to various issues given the long time frame of the ownership data, share price data for all companies was not obtained for the whole time frame. For an example Kone's initial public offering was in 2005 and therefore ownership and price data is only available for less than 15 years. The maximum time frame available was used for all case companies.

4.3 Methods

The data analysis begins in Chapter 5.1 with an analysis of ownership structures of the case companies during the time period of 22 years (1995-2016) for the majority of case companies and shorter time periods in the case of Kone (6/2005-2016), Sampo (1997-2016) and UPM-Kymmene (4/1996-2016). Here, all shareholdings of the stock in question were listed under investor groups and a snapshot of the ownership structure for the last day of each observed month was taken. This data was presented with charts and statistics tables for each company. Another look at the data was presented through charting the adjusted stocks prices with the nominal value of ownership stakes of the investor groups. Here, one must notice that all nominee shareholdings are excluded from Chapter 5 and therefore the charts and tables do not represent the total amount of shares outstanding of the case companies. Historical price data obtained from NASDAQ Helsinki was used in this analysis while combining it with the ownership data obtained from Euroclear.

There were many options in how to deal with the statistics of ownership and the changes within them and through various iterations the final decision was to observe, how investor groups acted during annual highs and lows of the stock price in Chapter 5.2 (later referred to as the High/Low analysis). A second, similar, analysis was performed for each month during the time frame comparing buy/sell decisions by investor groups and comparing them with monthly returns (later referred to as the Monthly analysis). This was done to assess whether investor groups had systematic tendencies in their investment decision-making as well as differences in these tendencies across the groups. Important to note here is that, especially in the cases Nokia, Kone, Sampo and UPM-Kymmene, changes through nominee transactions and changes in nominee shareholdings are not accounted for and therefore the monthly snapshots of ownership do not represent the ownership of all shares outstanding. Many academic studies have found institutional owners with a preference for momentum strategies and household owners having a preference for contrarian strategies in the marketplace (Grinblatt & Keloharju, 2001, Shum & Faig, 2006, Wermers, 1997).

Of major interest was, do investor groups have tendencies such as exploiting momentum- or contrarian-based strategies. Therefore calendar year highs and lows for the stock price adjusted for splits were deemed of major interest and they were observed for each company (High/Low analysis) for the whole time period available – 1997-2016 for the majority of the cases. All equity issues and buybacks of sizeable impact to the shareholder composition were taken into account during the study. Next, changes in ownership of all

investor groups were calculated for each of the aforementioned months. The same procedure was done in the Monthly analysis section for each month in the time period while comparing the buys and sells of investor groups with the same month's stock returns.

The data was analysed so that for every annual high and low point for the stock price, the geometric change of investor group holdings was calculated. Same procedure was done for each month to look at general trends over the time frame. Contrarian strategy during the time period was described as buying at annual lows and selling at annual highs. Momentum strategy was described as selling at annual lows and buying at annual highs. For the Monthly analysis, the stock's return was used for determining strategy type – buying (selling) during a positive return month for an investor group was determined as momentum-based (contrarian-based) strategy. Via the same logic, selling (buying) during a negative return month was determined as momentum-based (contrarian-based) strategy.

Momentum score

In order to shed light on different investor groups' trading behavior in Chapter 5.2, a variable called momentum score was created. A negative score represents contrarian trading behavior and a positive score represents momentum trading behavior. The absolute value of the monthly score represents the geometric change (in percentages) in shares owned at the end of the month in question in relation to the previous month. Examples of the process of calculating the momentum scores for the High/Low analysis and Monthly analysis will be described in Tables 2 and 3, respectively.

To give a few examples of this, let's say households increased their shareholdings from 1000 to 1005 shares during a month were the stock price of the company set an annual high resulting in a geometric change of +.5 % in shareholdings at an annual high. This would give households for this month a score of 0.50. If the investor group of financial & insurance companies increased their shareholdings from 3000 to 3030 during a month that set an annual low for the stock price this would result in a change of +1 % in shareholdings at an annual low. This would give the group a score of -1.00. For the monthly analysis similar procedure was done – if households decreased their ownership from 1000 to 990 shares during a negative return month, the group would be scored as 1.00 (decrease of 1 % in ownership during a negative return month). Therefore the geometric change in ownership was multiplied by either 100 or -100 depending on the nature of the change with respect to return or annual high/low to get the momentum/contrarian strategy score. As a summary, a positive score represents a momentum strategy and a negative score represents a contrarian strategy. Imaginary examples of calculating momentum scores for a single investor group will be presented in the following tables.

Investor group	Annual high	Annual low
Year 1	2,00 %	
Year 2	1,70 %	
Year 3		0,40 %
Year 4		1,00 %
Year 5		-4,25 %
Year 6	0,89 %	
Year 7	3,23 %	
Year 8	1,90 %	
Year 9		-3,13 %
Year 10		-2,10 %
Average	**1,94 %**	**-1,62 %**
Average score	**1,944**	**1,616**
Average momentum score	**3,56**	
Median	**1,90 %**	**-2,10 %**
Median score	**1,9**	**2,1**
Median momentum score	**4**	

Table 2. *Example of High/Low analysis and momentum scores (average and median) for a time period of 10 years.*

Investor group	Positive return	Negative return
Month 1	1,45 %	
Month 2	1,20 %	
Month 3		1,30 %
Month 4		-2,34 %
Month 5		-2,11 %
Month 6	1,90 %	
Month 7	3,10 %	
Month 8	0,76 %	
Month 9		0,43 %
Month 10		-1,10 %
Average	**1,68 %**	**-0,76 %**
Average score	**1,682**	**0,764**
Average momentum score	**2,45**	
Median	**1,45 %**	**-1,10 %**
Median score	**1,45**	**1,1**
Median momentum score	**2,55**	

Table 3. *Example of Monthly analysis and momentum scores (average and median) for a time period of 10 months.*

In order to reach the final scores for each investor group, presented in Tables 11 and 12, the following procedures were done for the data:

- High/Low analysis – median and average values for all annual highs and lows were calculated and the final median and average momentum scores were the result of adding two numbers together – in the case of averages, the average value of the annual highs was added to the average value of the annual lows and vice versa for the median values. Therefore if households on average increased their holdings by 1% during annual low months and decreased their holdings by 2% during annual high months, households would gain a momentum score of -3.00 (-1.00 + -2.00). If an investor group exhibited contrarian trading behavior during annual high months and momentum trading behavior during annual low months, it would be possible to gain a score of zero. Example of this is presented in Table 2.

- Monthly analysis – median and average values for each month were calculated with the same logic while instead of using annual high and low months, data was collected for each month and months with positive (negative) returns were put in the place of annual high (annual low) months. Example of this is presented in Table 3.

One must note that in the above examples (Tables 2 & 3), the sign of the score might be the opposite compared to the equity ownership increase/decrease and this is due to adjusting for contrarian/momentum trading. A negative (positive) score always represents contrarian (momentum) trading while the data points only represent whether the investor group increased or decreased their ownership stake in the company. Also, the scores for positive (annual high) and negative (annual low) return months are added to each other in order to reach the final momentum score, both median and average. Median and average are both presented as this was deemed to give a more complete view of the investor groups' behavior – especially in smaller case companies the changes in ownership in individual months might be extreme and therefore might give a distorted view of the reality in case of the average momentum score.

For every buy or sell decision there is a counterparty executing the opposite action of selling or buying the stock. For each annual high and low, a momentum score was calculated for three investor groups, i) financial & Insurance companies, ii) households and iii) rest of the world (=foreign ownership). The same procedure was done for the Monthly analysis and as an addition, this was done for all six investor groups. A positive momentum score described momentum-based trading while a negative momentum score described contrarian-based trading.

In theory, an optimal strategy for individuals and institutions in the marketplace would be to buy stocks at a cheap price and sell them at an expensive price – this is what the

momentum/contrarian strategy score should measure – a negative score represents buying low and selling high while a positive score represents selling low and buying high. There is evidence that momentum strategy can outperform other strategies (Grinblatt et al., 1995) and by pure mathematics, investors pursuing a long-term contrarian strategy (buy low, sell high) should outperform the market. A major limitation of this study is the fact that the analysis looks at each investor group in aggregate, not individual investors inside the groups. Therefore through the analysis performed in this study, one can not assess whether an individual investor sold stocks for loss or gain. Another major limitation of the study is the fact that nominee transactions and holdings were excluded from all data analysis due to the fact that the ultimate owner/decision-maker is non-identifiable. This excludes, for an example, foreign hedge fund holdings and trades.

5. DATA ANALYSIS

Chapter 5.1 will describe events that were meaningful in size to the data analysis of Chapter 5.2 and 5.3 and therefore such events presented challenges for maintaining the precision of the data analysis. Here, using the same order in company presentation as in the data analysis of Chapters 5.2 and 5.3, exclusions and adjustments made to the data analysis and their rationale will be described. Events that were deemed meaningful and in need of adjustments were stock splits, share issues, share buybacks and ownership arrangements related to acquisitions or the specifics of government ownership reorganizations. All nominee holdings are excluded from each company's ownership structure as well as all the changes in ownership structure due to nominee transactions. Therefore nominee holdings do not show up in Chapter 5.2 and nominee transactions are not accounted for in the analysis of investor group trading behavior in Chapter 5.3.

In Chapter 5.2 ownership structures of the case companies will be demonstrated by two charts for each case company. The first one of the charts will present the ownership stakes held by the investor groups monthly as a percentage of the total shares outstanding and an adjusted monthly closing price chart (data points for the last day of each month) separately for each company. The second company-specific chart will present ownership stakes in terms of market value of the shares held by the investor groups at the end of each month combined with monthly closing prices. As trading between investor groups changes the ownership structure of the company in question, findings from Chapter 5.2 will somewhat overlap with Chapter 5.3, which focuses more on investor groups' behavior. Both of these two charts for each company follow the same methodology by using data values for the end of each calendar month. All of the share prices are adjusted prices obtained from NASDAQ Helsinki.

Chapter 5.3 will discuss the data analysis of investor groups' trading behavior and the Chapter will have 2 distinct sections, the High/Low analysis and the Monthly analysis. The former will investigate Financial-Insurance investor group, Household investor group and Rest-World investor group and their trading only during the months where the stock in question set an annual high or low (calendar year) while the latter investigates monthly trading data of all six investor groups.

5.1 Company events warranting adjustments to the analysis

The data has been adjusted or excluded from multiple companies' trading data analysis (Chapter 5.3), each of these are explained in further detail in Chapter 5.1. All information for these exclusions and their rationale has been obtained from official company reports.

Small increases in shares outstanding, such as employees and/or board members exercising their options or receiving stock grants, have very slight and negligible effects (if not specifically stated otherwise) on ownership structure changes, which is why these have not been adjusted for in the data analysis. Small increase in shares outstanding is determined in this study as a smaller than one percentage point increase in the total share count. This increase in shares was determined as small enough to not cause a significant difference in the trading figures. In general, all share buybacks are actual transactions where the company purchases shares from a current investor and therefore the only adjustments made in cases, where the companies performed major buybacks or retirements of shares (the largest such actor being Nokia) that were held by the company itself required adjustments only for the case company's own investor group, the Non-Financial companies' investor group. Company specific events and narratives related to them will be presented next.

Nokia

Nokia split the stock multiple times during the observed time period and corrective adjustments have been made, where possible, in the data analysis in the following months: April 1998 – stock was split 1:1, April 1999 – stock was split and there was an equity issue, therefore this month has been excluded from the Monthly analysis, April 2000 – stock was split 1:3. Nokia had multiple buyback programs and therefore the momentum scores of Non-Financial Companies investor group might not be reflective of the true nature of the investor group as buybacks distort the actions of this group. In order to adjust for the major buybacks during multiple months by Non-Financial investor group's (=buybacks) change in ownership has been excluded from the Monthly analysis, these months were April&May 2004, April 2005, April 2007, March 2009 and February 2015. As the company has had ongoing buyback programs, the data for Non-Financial companies' investor behavior can not accurately describe the behavior of the group as one can not distinguish all buybacks from other companies' purchases with precision. Nokia issued large blocks of shares (representing over 1 % of the amount of shares outstanding during the respective months) in November 2015 and February 2016 and therefore these months have been excluded from the Monthly analysis (neither set an annual high or low).

Nokia entered into a merger agreement with Alcatel-Lucent in 2015 and as a part of the purchase price issued 1.5 billion shares to Alcatel-Lucent shareholders in January 2016 – this month happened to have the annual high of Nokia's share price and therefore the changes in ownership of all investor groups for this month have been excluded from the data analysis. This was deemed appropriate due to the diverse base of Alcatel-Lucent shareholders as this made it impossible to differentiate between marketplace activity by investor groups and directed share issues to investor groups.

Of all the case companies Nokia was the largest by market cap on average during the study time period. Nokia is also listed in New York Stock Exchange, which provides a

platform for more international investors interest than the Helsinki Stock Exchange. Nokia also had the highest ownership share of institutional investors averaging over 80 % (82.33 %) of the total amount of shares outstanding during the time period with nominee shareholdings included in the calculation. These nominee shareholdings are completely excluded from the following data analysis.

Kone

The time frame used for Kone was June 2005 to December 2016 due to the fact that Kone and Cargotec were split into two different, independent companies in May 2005. The data analysis includes Kone B shares and excludes Kone A shares as the latter are not listed on Helsinki Stock Exchange while the former are. The stock was split 1:1 in November 2005 with the rationale of increasing the liquidity of the stock. The stock was split 1:1 in again February 2008 resulting in the total amount of shares outstanding doubling in amount. The stock was split 1:1 for a third time during the study time frame in December 2013 resulting in the total amount of shares doubling in amount. These three splits result in every original B share becoming 8 shares during the time period so the share amount increased by 700 % due to the splits. Each month, where a split was completed, a corrective adjustment was made to the Monthly analysis and no adjustment was needed for the High/Low analysis due to none of these months setting annual highs or lows.

During the whole time period the share amount increased by 730 % - the 700 % are explained by splits and the rest, 30 %, can be explained mainly by employee, executive and board compensation schemes. The only month excluded from the Monthly analysis was May 2010 due to an equity issue increasing the total amount of shares outstanding by over 1 percent.

Sampo

Sampo has two share classes, A and B. The data used for Sampo includes only A-shares that are listed on the Helsinki Stock Exchange (OMX Helsinki), the differences between A- and B-shares being that they have 1 and 5 votes, respectively, and the amount of shares (as of December 31st 2016) 534 million and 1.2 million, respectively. Increases in share count did not have a major effect in shareholder composition with the following two exceptions of ownership changes by the government ownership reorganization (Leonia) and the all-share merger deal with Mandatum.

The shares were split 1:3 (an increase of 300 % in the amount of shares outstanding) in October 1997 and this has been adjusted for in the Monthly data analysis. The shares were split again in April 2001 (1:4) increasing the share count by 400 %. This has also been adjusted for in the Monthly data analysis. Adjustments were made for major events, share issues as well as share buybacks, which will be explained next. Corrective adjustments were necessary for the company's buyback program on the following months: June 2000, April 2003, April 2006, May 2008 and November 2008. For all of the abovementioned

months, the changes in Financial-Insurance companies investor group have been excluded from the Monthly data analysis (none set annual highs or lows) and the November 2008 buyback was completely excluded from the Monthly data analysis due to its major effect on all investor groups' shareholdings. In January of 2001 the company issued approximately 14.7 million new shares increasing the total amount of shares outstanding by over 2.5 percent and therefore the month was excluded completely from the Monthly data analysis (did not set an annual high or low). Other major events during the study period, the merger with Mandatum and the exchange of the government's shareholdings in Leonia into Sampo shares will be discussed in the following two paragraphs.

The sudden jump in the shareholdings of the Finnish Government in the beginning of 2001 is explained as follows. The Finnish Government owned Leonia Oyj, owner of a government-owned bank Postipankki, or Postisäästöpankki, which merged with the insurance company Sampo in 2000. The letter of intent for this merger was signed in October 1999 and Eduskunta, the Finnish Parliament, agreed that the Government may switch Leonia shares into Sampo shares according to the deal. In January 2001 44.72 million Sampo A-shares (listed on OMX Helsinki) were issued to the Government therefore having a major impact on the shareholder composition of the company as reported by the Helsinki Exchange. This has been adjusted for in the Monthly data analysis (the month did not set an annual high or low).

In 2001 February, the share set a calendar-year high for the year 2001. During this month, the shareholdings by households increased by over 100 % over the previous month and this is explained next. Sampo and Mandatum Bank boards entered into a merger agreement (Mandatum merger) between the two parties where the purchase agreement was settled as an all-share deal, where Sampo acted as the buyer and Mandatum as the seller. This merger increased the total amount of A-shares of Sampo by 7.1 million shares that were issued to the former shareholders of Mandatum Bank. This resulted in households' shareholdings of Sampo increasing from 3.1 million to 6.5 million. Due to this month being an annual high of the stock price this month was excluded from both parts of the data analysis. This is due to the major changes in ownership stakes of households and other groups that do not represent actual buying activity as well as the fact that exact issue amounts to different shareholder groups are not public data.

UPM-Kymmene

UPM entered into an agreement in May 2001 to purchase a German paper manufacturer Haindl including four manufacturing plants in Germany and Austria – this deal was funded by a combination of cash and equity and the board of UPM agreed in September 2001 to issue 12.3 million shares to Haindl shareholders. This transaction was completed in November 2001 and the effect of the share issue has been excluded from the data analysis by a corrective adjustment. UPM-Kymmene (then Repola Oy) performed a convertible debt issue in 1994 and this resulted in the count of shares outstanding increasing by

a total of 7.3 million shares during the time frame of 1994-2003 – no adjustments were made for these new shares as the conversions were very diffusely spread along the time frame and very small in size in terms of monthly conversions. Starting from January 1997 until the stock split in March 2003, the shares outstanding increased by 27.1 million which was mainly a result of the Haindl deal and the Repola convertible debt, the two accounting for over two thirds of the new shares. The assumption that the rest of the increase was a result of compensation schemes was made as the company has actively engaged in such schemes while being a publicly traded company.

Other adjustments and exclusions made in the data analysis for UPM-Kymmene were made as follows: five months with major equity issues; April 1998, May 2005, May 2007, May 2008 and August 2011 (all five months excluded completely from Monthly analysis and May 2005 excluded from the High/Low analysis). The company had an active share buyback program during the time period of the study and therefore the following adjustments have been made: December 2007, April 2011 and May 2011 were adjusted by excluding the Non-Financial companies investor groups' monthly data from the Monthly analysis and for May 2011 the same was done for the High/Low analysis as this month set the annual high for the year 2011.

Finnair

Finnair has been described as a strategic holding for the Finnish Government, which is why the General-Government group has a majority holding in the company and therefore the company's equity free float is smaller than in other cases. Two months were excluded from the Monthly analysis due to significant share issues impacting the total number of shares outstanding by over 1 percent and these months were September 1998 and October 2005. Finnair decided to enhance the company's balance sheet in 2007 and did so by issuing new equity to current shareholders and thereby receiving a capital injection of 243 million euros. This was completed in December 2007 and therefore this month has been excluded from both parts of the data analysis (the month also set the annual low for the stock price in 2007).

Stockmann

Stockmann has a dual class share structure and both of the shares, class A and class B, are listed on the Helsinki Stock Exchange. As of December 31st 2016 there were 30.5 million class A shares and 41.5 million class B shares and the only material difference between class A and class B is that class A shares entitle the owners to 10 votes while B class shares entitle the owners to 1 vote. Therefore class A share ownership determines who exerts corporate control and as the A shares are dispersely owned, so is the control of the company dispersely spread. The data analysis includes B shares while excluding the A shares completely from the analysis.

Stockmann decided to split the stock 1:2 in May 1998, tripling the amount of shares outstanding and the data analysis' results are adjusted for this change. During the time frame of the study, Stockmann had multiple rights and equity issues resulting in major changes in shares outstanding during the following months: June 1998, June 2008, August and September of 2009 and June 2011. The former 5 months were excluded from the Monthly analysis (no effect on the High/Low analysis) due to the major effect on ownership structure changes that can not be adjusted for with proper reliability contrary to the change resulting from stock split.

Saga Furs

Saga Furs has two classes of shares, A and C. The company is controlled by the FFBA, local and national fur breeders' associations. By market cap, Saga Furs is the smallest of the case companies. The data analysis was performed using data concerning Saga Furs class C shares, which are listed in Helsinki Stock Exchange while the class A shares are not listed. Saga Furs had no changes in shares outstanding during the time frame of the study. Therefore no adjustments for specific months were necessary.

5.2 Ownership structures

This Chapter will present data about case companies' ownership structure and it's evolvement over time during the study time period. The market value of different investor groups' shareholdings will also be presented with companies' adjusted stock price data. The market value of the groups' shareholdings correlates very strongly with the stock price movements due to the fact that changes in stock ownership are rather minor on a monthly basis compared to the changes in stock price on a monthly basis. All of the data related to a single case company will be presented and discussed and subsequently the section moves into the next company, starting with Nokia moving into Kone, Sampo, UPM-Kymmene, Finnair, Stockmann and lastly Saga Furs (Chapter 5.2 will follow the same sequence).

Nokia

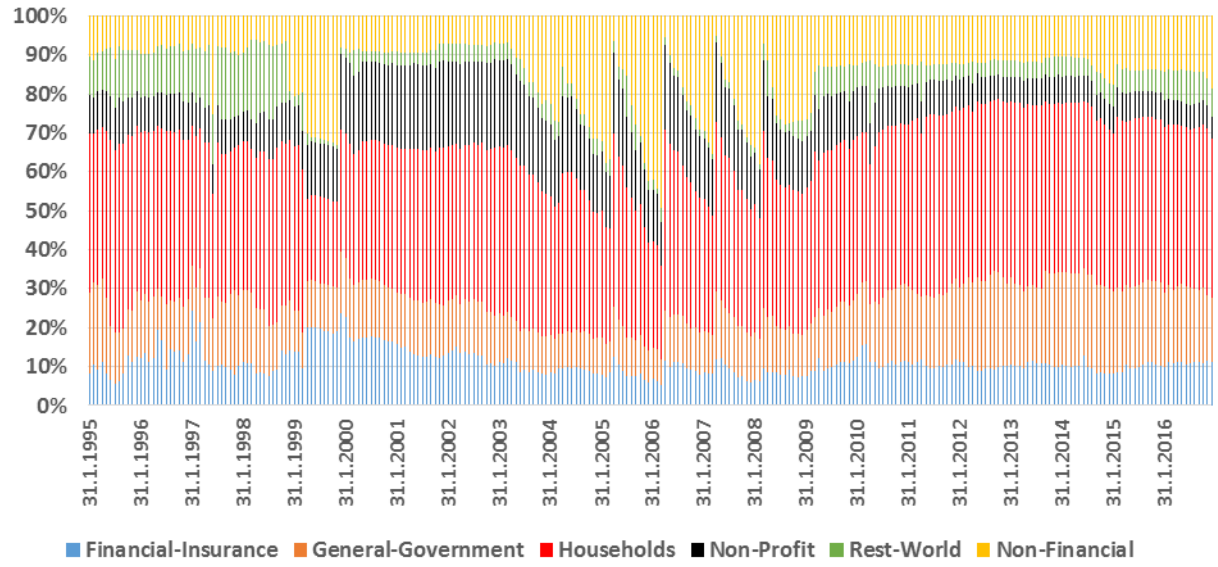

Chart 1. *Monthly ownership structure of Nokia, 1995-2016.*

Nokia's ownership structure over 22 year time period is presented in Chart 1. Nokia has been one of the largest and most traded equities in Helsinki Stock Exchange during the time period. Institutional ownership in Nokia peaked in January 1997 at over 24 %, in December 1999 at over 23.8 % just before the dot-com bubble burst. The subsequent decline in institutional ownership is consistent with herding behavior of institutional investors (Grinblatt et al., 1995). This period shows momentum strategy employed over the long-term by institutional investors as supported by Wermers' (1997) paper. When nominee shareholdings are included in the calculation, institutional ownership averaged over 82 percent during the time period. The high share of institutional ownership is typical for a large cap (high market capitalization, or high market value) company consistent with literature (Sias, 1996; Gompers and Metrick 2001). During the time period there has been major variance in the ownership stakes of both the Non-Profit and Rest-World groups. Ownership stakes of the General-Government group has been smallwhile the large variance in Non-Financial group's ownership being mostly the result of buyback programs in which the company has retired the shares that have been bought back.

Nokia	**Maximum**		**Minimum**		**Average**
	%-value	Date	%-value	Date	
Financial-Insurance	24.25 %	January-97	5.41 %	March-06	11.07 %
General-Government	25.38 %	September-12	6.33 %	March-06	15.38 %
Households	48.43 %	August-95	21.06 %	April-99	39.61 %
Non-Financial	49.34 %	March-06	5.04 %	April-07	15.00 %
Non-Profit	22.68 %	December-02	5.78 %	December-16	12.85 %
Rest-World	21.14 %	April-98	1.00 %	September-99	6.09 %

Table 4. *Monthly maximum, minimum and average ownership stakes in Nokia by investor groups, 1995-2016.*

As presented in Table 4, households have averaged the highest share of ownership in terms of non-nominee shareholdings through the time period averaging over 39 percent. The variance in institutional ownership looks artificially low because of the statistics including only non-nominee shareholdings as foreign investors hold the majority of their share in nominee arrangements with Finnish financial institutions or companies incorporated in Finland. The enormous variance in Non-Financial companies' ownership between 5 and 49 percent is explained by Nokia's large share buyback program, which included retiring the bought back shares. Foreign direct ownership peaked in April 1998 at 21.1 percent while averaging only 6.1 percent. The Finnish Government has played a role in Nokia's ownership through minority shareholdings, with the highest stake at 25.4 percent in September 2012 and averaging 15.4 % during the time period. Non-Profits had significant ownership stakes as well hitting an all-time high at almost 27 percent in December 2002 and averaging almost 13 percent during the time period.

As a summary, Nokia's shareholder composition remained rather stable during the time period, the Finnish Government increasing it's ownership stake towards the end of the time period. Household investors were major holders of the non-nominee listed shareholdings of the company. The step-function changes in Non-Financial companies' ownership stake are explained by the company's share buyback program. Alcatel-Lucent acquisition explains the increase in Rest-World group (=foreign investors) ownership stake in January 2016.

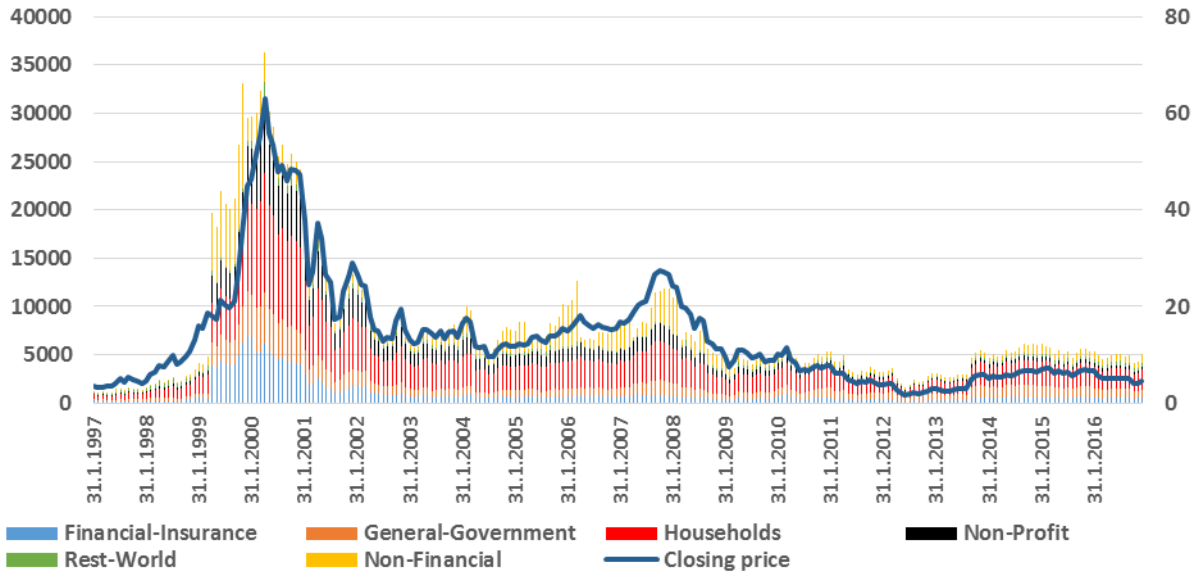

Chart 2. *Monthly ownership stakes in Nokia (logarithmic left-hand axis values in million euros) and closing prices, 1997-2016.*

Chart 2 represents the investor groups' shareholdings market values while showing the stock price during the study time period. The above chart and all of the following charts do not represent 100 % of the total amount of shares outstanding (nominee shareholdings excluded) and therefore equity values of the charts do not equal the respective company's

market capitalization values. Nokia's stock price peaked during the dot-com boom and has declined significantly afterwards. For the whole time period from 2010 to 2016 the stock has traded below it's minimum price between 1999 and 2008, being rather stagnant. The dot-com boom ended in 2000 resulting in a crisis for many technology companies including Nokia. An interesting feature of the household investors during this time, supported by many published papers (Kaniel et al., 2008; Kaniel et al., 2012; Barrot et al., 2016), is that they provided liquidity during the crisis and were major net-sellers of Nokia equity from September 1999 to May 2001. During the 21 month time period, there were 4 months, where households were net buyers, on average increasing their ownership stake by 0.62 % and 17 months, where they were net sellers, on average decreasing their stake by 1.38 %. For non-nominee institutional investor shareholdings the same pattern repeated, only in a greater magnitude supported by De Haan and Kakes' (2011) findings in the Dutch market. For the same time period as stated above, institutional investors increased their stake during 3 months by on average 1.55 % while decreasing their stake during 18 months by on average 5.52 %. This represents a large contrarian tendency, where hubris dominated equity markets, especially in technology stocks, and households as well as domestic institutional investors (non-nominee transactions) were able to dispose stocks at very high prices.

Kone

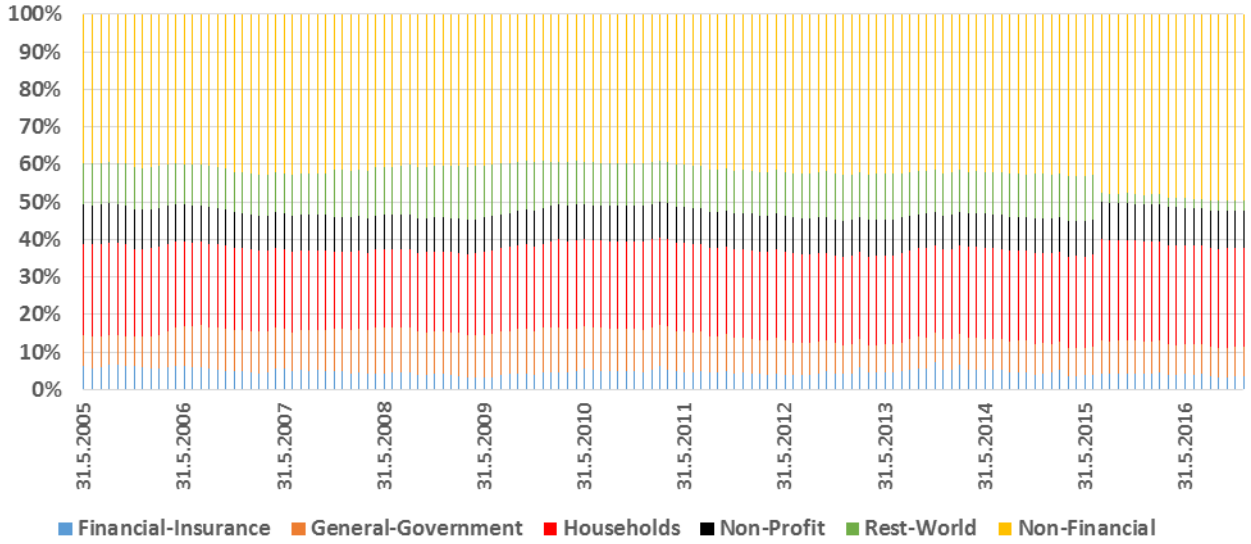

Chart 3. *Monthly ownership structure of Kone class B shares, 5/2005-2016.*

Kone's ownership structure by investor group shares held during the time period after separating from Cargotec is presented in Chart 3. It is a family-controlled company and the controlling family is the Finnish Herlin family. The ownership stakes of different investor groups have stayed very consistent throughout the 11.5 year time period. Government, Non-Profit and institutional investor groups have had rather small ownership stakes while Non-Financial companies (mainly the Herlin family stake) and household investors

have on average held over 65 % of the shares during the study time period. Foreign investors' ownership stake dropped dramatically in 2015 to less than 3 % of all of the non-nominee shareholdings and haz been stagnant since. One must take into account, that control is exerted by the Herlin family due to their ownership of class A shares, which are not listed and have more votes (1 compared with 0.1) than the class B shares.

Kone	**Maximum**		**Minimum**		**Average**
	%-value	Date	%-value	Date	
Financial-Insurance	7.20 %	November-13	3.05 %	April-09	4.68 %
General-Government	12.27 %	May-08	7.22 %	May-15	9.67 %
Households	27.00 %	July-15	20.59 %	November-07	23.42 %
Non-Financial	49.75 %	October-16	39.04 %	October-09	42.12 %
Non-Profit	10.61 %	May-05	8.86 %	November-13	9.53 %
Rest-World	14.23 %	March-09	2.47 %	August-15	10.58 %

Table 5. *Monthly maximum, minimum and average ownership stakes in Kone by investor groups, 5/2005-2016.*

As seen in Table 5, the ownership stakes of all investor groups have stayed very constant over the study period. The variance of ownership stakes inside the investor groups' holdings has been very small in all groups except the Rest-World, or foreign investors, group, ranging between 2 and 14 percent during the time period.

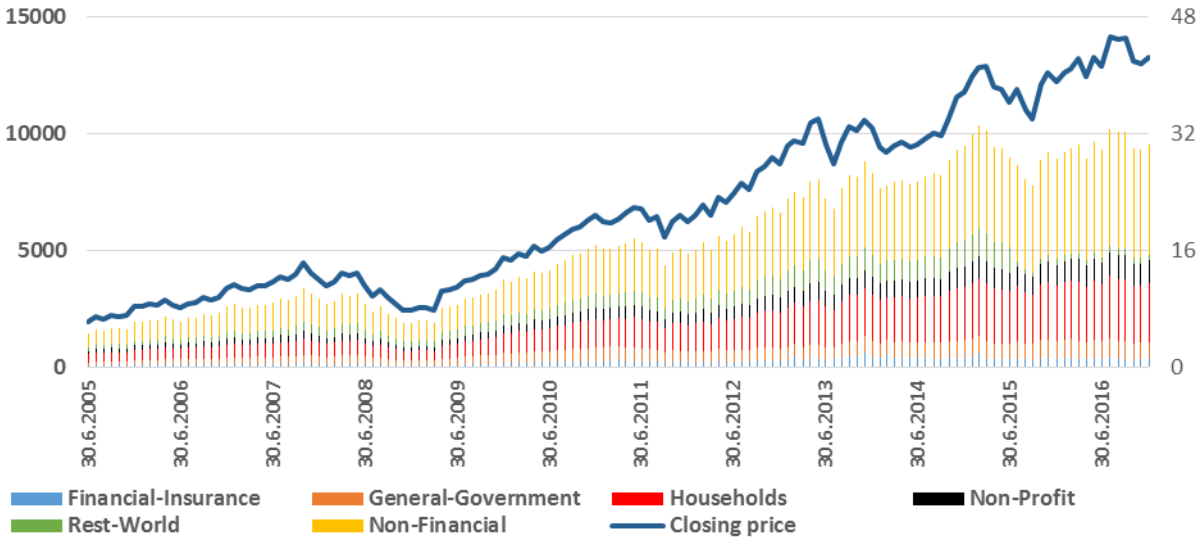

Chart 4. *Monthly ownership stakes in Kone class B shares (logarithmic left-hand axis values in million euros) and closing prices, 6/2005-2016.*

Kone's share price has increased constantly over the study period while slumping slightly during and after the financial crisis besides a few little slumps between 2013 and 2016. As the price has grown steadily while the investor groups' ownership stakes have held steady, the ownership stakes' market values have been growing very steadily over the 11.5 year time period. While Kone has grown into one of the largest capitalization companies in the Helsinki Stock Exchange during the time period, the ownership stake held

by institutional investors has not grown significantly (peaking in November 2013 at 7.2 %). Paper by Fernando et al. (2014) supports this as they found that institutional investors are reluctant to invest in family-controlled companies.

Sampo

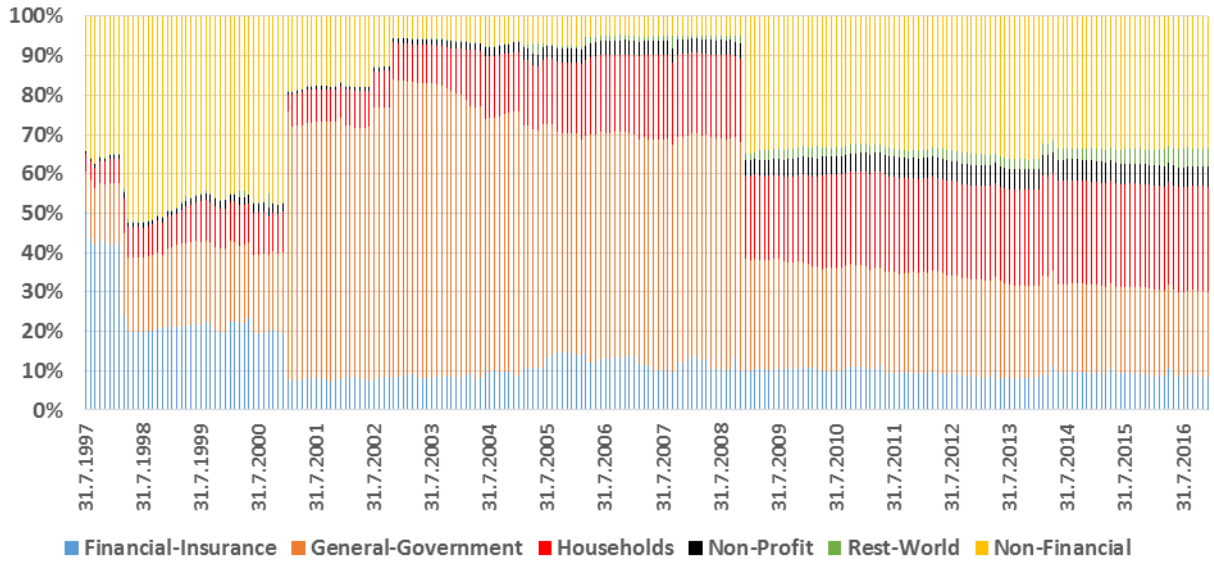

Chart 5. *Monthly ownership structure of Sampo class A shares, 7/1997-2016.*

Chart 5 represents the ownership stakes in Sampo held by different investor groups during the time period. The two largest changes in ownership have occurred due to the actions of the Finnish Government – first converting it's ownership of Leonia into Sampo shares resulting in the major increase in government ownership in January 2001 and second subsequent decline in ownership over time between June 2003 (75 percent) and December 2008 (28.2 percent) as the Government has disposed the majority of it's ownership stake in the company in the marketplace. Large ownership stakes during the time period have been held by institutional investors, the Finnish government and Non-Financial companies investor group. The large step-change in ownership structure that occurred between November and December 2008 was a result of the government transferring the ownership of approx. 79 million shares from the government to the government's investment vehicle Solidium, which is a Non-Financial company according to Euroclear's definition. Therefore this change does not represent a true ownership change.

Sampo	**Maximum**		**Minimum**		**Average**
	%-value	Date	%-value	Date	
Financial-Insurance	50.51 %	July-97	7.29 %	October-01	12.63 %
General-Government	75.58 %	November-02	9.93 %	July-97	39.22 %
Households	26.72 %	June-16	4.15 %	January-01	17.74 %
Non-Financial	52.26 %	June-98	4.74 %	October-06	25.55 %
Non-Profit	5.41 %	August-14	0.71 %	July-97	3.33 %
Rest-World	4.91 %	July-16	0.01 %	July-97	1.54 %

Table 6. *Monthly maximum, minimum and average ownership stakes in Sampo by investor groups, 1997-2016.*

Table 6 shows the maximum, minimum and average ownership stakes of the investor groups in percentages. Institutional investors (including shares held by the company itself) held the majority of the stock in July 1997 with a 50.5 % ownership stake of all the non-nominee shareholdings while averaging an ownership stake of 12.6 % over the study time period. Direct shareholdings by the Finnish government ranged between 75.6 (November 2002) and 9.9 percent (July 1997) during the time period. Non-Profit and Rest-World groups have had very minor and non-significant ownership stakes in Sampo during the study time period. The variance in household investors' shareholdings has been large, ranging between 26.7 (June 2016) and 4.2 percent (January 2001) and averaging 17.7 percent during the study time period.

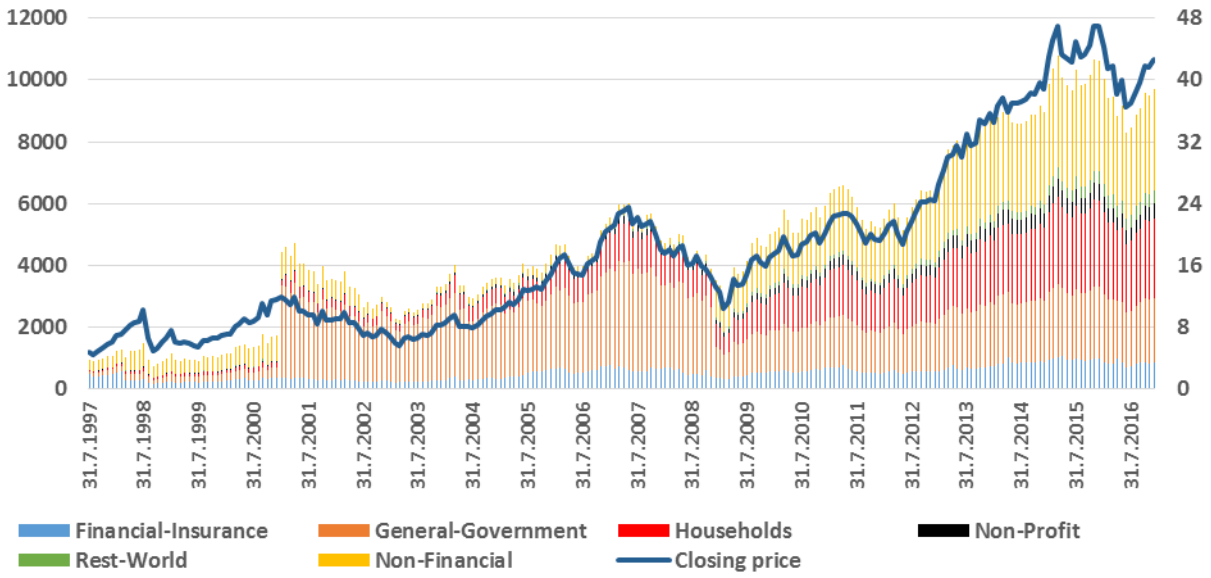

Chart 6. *Monthly ownership stakes in Sampo (left-hand axis values in million euros) and closing prices, 1997-2016.*

Sampo's market value has increased enormously during the time period between 1997 and 2016 reflected in Chart 6. The financial crisis and the dot-com boom hit Sampo's share price, however not as hard as Nokia's share price was hit. From 2003 to 2016 the company's market value has increased approximately 600 % resulting in major shareholder value creation over time. This wealth has spread very well amongst the investor

groups as the variance in each groups' shareholdings has been small and therefore the ownership stakes of different groups have stayed rather constant. Institutional ownership has been rather small, most likely due to the fact that the majority of institutional owners hold their shares in nominee accounts, which are absent from this data.

UPM-Kymmene

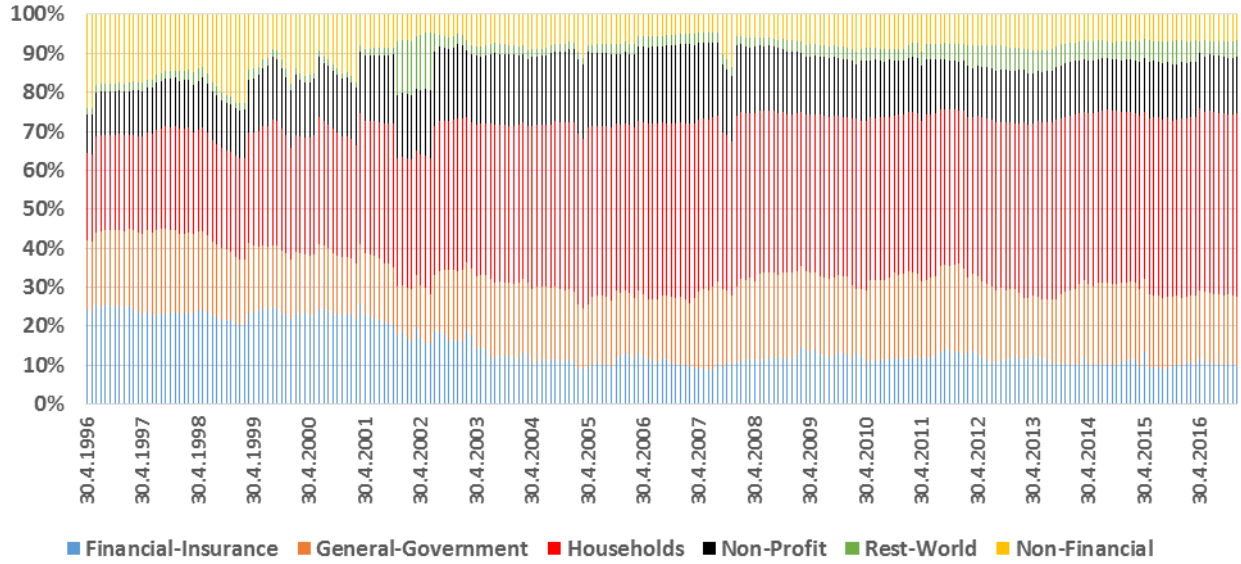

Chart 7. *Monthly ownership structure of UPM-Kymmene, 1995-2016.*

Chart 7 expresses the ownership stakes held by different investor groups in UPM-Kymmene during the study time period. The step-function changes of ownership in late 2001 and late 2007 are the results of the Haindl acquisition in 2001, where equity was issued to foreign investors as part of the financing of the deal, and the company's share buyback program in 2007 including the retirement of the bought back shares. Otherwise, the non-nominee shareholdings of all investor groups have stayed rather constant during the study time period.

UPM-Kymmene	**Maximum**		**Minimum**		**Average**
	%-value	Date	%-value	Date	
Financial-Insurance	25.63 %	June-96	8.70 %	June-07	14.98 %
General-Government	22.73 %	November-11	11.99 %	December-01	18.34 %
Households	46.91 %	June-16	22.26 %	April-96	38.55 %
Non-Financial	24.02 %	May-96	4.56 %	June-02	9.37 %
Non-Profit	20.53 %	February-07	9.94 %	April-96	15.28 %
Rest-World	14.76 %	June-02	1.34 %	December-98	3.48 %

Table 7. *Monthly maximum, minimum and average ownership stakes in UPM-Kymmene by investor groups, 1996-2016.*

Ownership stakes' maximum, minimum and average percentage values are presented in Table 7. The largest shareholders during the study time period have been household investors, the Finnish Government, Non-Profit group and institutional owners with average ownership stakes (of non-nominee shareholdings) of 38.6, 18.3, 15.3 and 15.0 percent, respectively. Variance of ownership within the investor groups has been small when taking the buyback program and Haindl acquisition into account. The most relevant variance has been in the institutional ownership, which has ranged between the minimum of 8.7 percent in June 2007 and the maximum of 25.6 percent in June 1996. There has been no majority shareholder group present during the study time period.

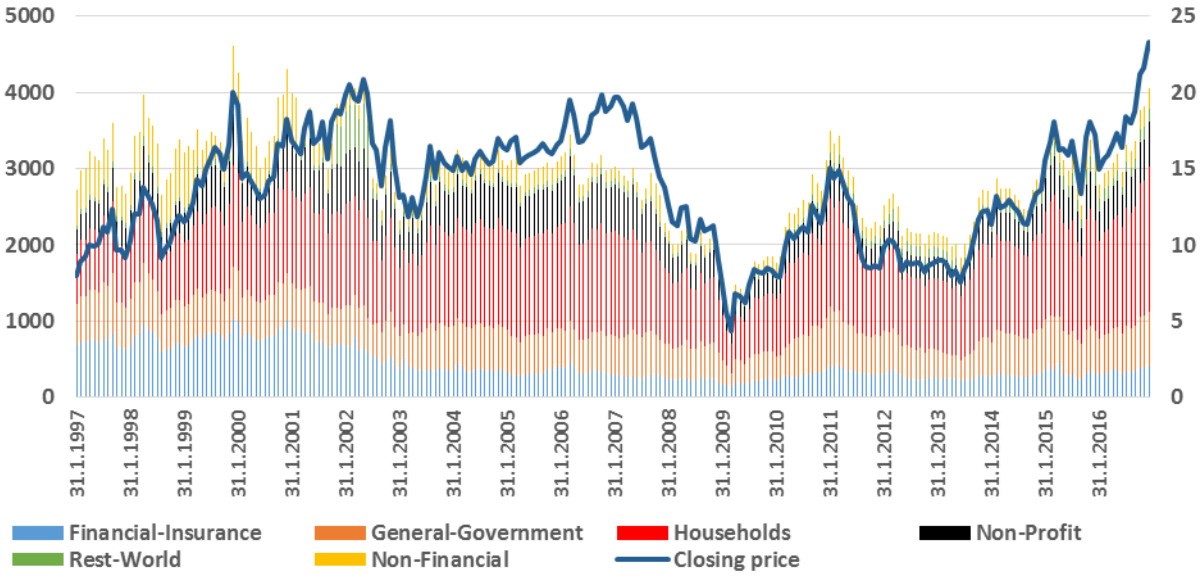

Chart 8. *Monthly ownership stakes in UPM Kymmene (left-hand axis values in million euros) and closing prices, 1997-2016.*

Chart 8 represents investor groups' shareholdings value over the study period as well as the stock's share price. As UPM-Kymmene (later referenced to as UPM) operates in a cyclical industry and this has resulted in large variance in the stock price during the time period. The company's share price performance was very poor before and shortly after the financial crisis like other large capitalization case companies hitting it's all-time low of 4.35 € per share on the 31st of March, 2009. The stock price has has risen more than 400 percent from the bottom of 2009 to a new all-time high of 23.34 € in the end of 2016.

Finnair

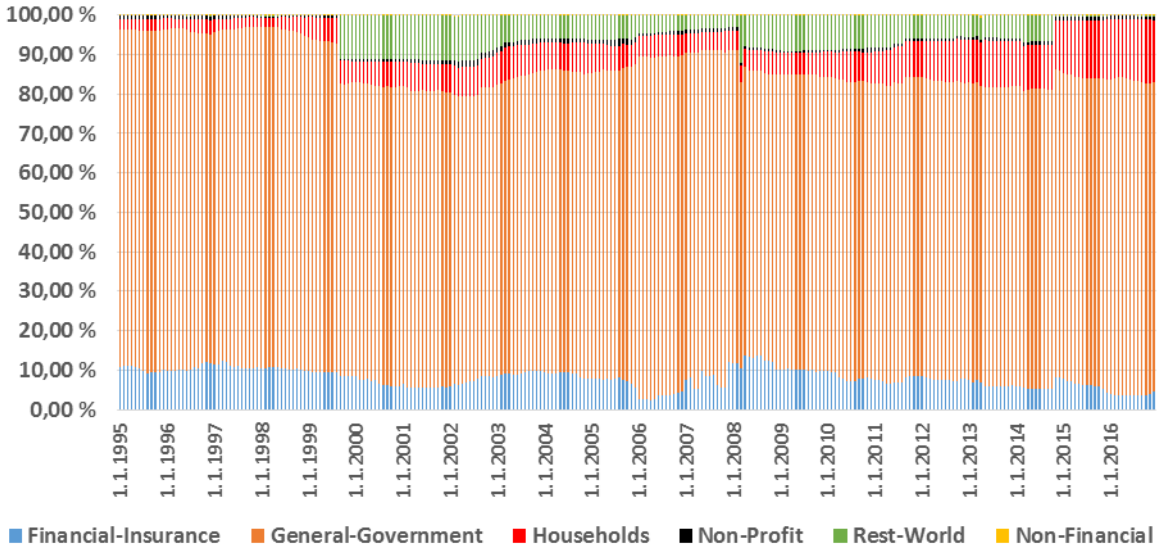

Chart 9. *Monthly ownership structure of Finnair, 1995-2016.*

The ownership structure of Finnair is presented in Chart 9, where one can observe the company being government-controlled as the Finnish government has held the majority of the equity for the whole time period of the study. Foreign, institutional and household investors have played very small roles in the ownership of Finnair (non-nominee shareholdings) during the study time period. Finnair has been deemed a strategic company for the Finnish government and therefore the government has not disposed it's majority position in the company contrary to the government's stake in Sampo.

Finnair	**Maximum**		**Minimum**		**Average**
	%-value	Date	%-value	Date	
Financial-Insurance	13.74 %	April-08	2.43 %	April-06	7.98 %
General-Government	87.12 %	March-06	72.14 %	August-02	78.76 %
Households	16.13 %	November-16	2.32 %	December-97	7.25 %
Non-Financial	0.64 %	April-13	0.02 %	December-10	0.06 %
Non-Profit	1.88 %	August-05	0.32 %	June-98	0.82 %
Rest-World	11.98 %	March-08	0.01 %	March-95	5.14 %

Table 8. *Monthly maximum, minimum and average ownership stakes in Finnair by investor groups, 1995-2016.*

The Finnish government has on average owned over three fourths (78.7 %) of Finnair stock as represented in Table 8. The variance in ownership of all other investor groups has been large, which can be partly explained by the company stock's small amount of free float and small stakes by non-government investors. Institutional investors and household investors have on average held 8.0 and 7.3 percent of the non-nominee share-

holdings, respectively. Households held their maximum stake of 16.1 percent and institutional investors their maximum stake of 13.7 percent in November 2016 and April 2008, respectively.

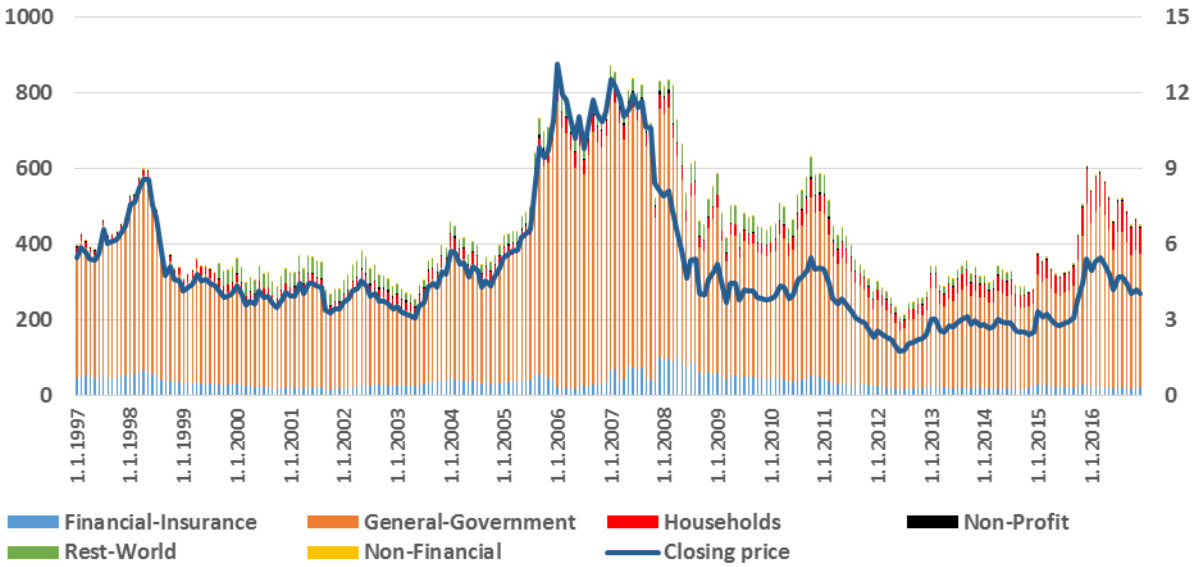

Chart 10. *Monthly ownership stakes in Finnair (left-hand axis values in million euros) and closing prices, 1997-2016.*

Chart 10 represents Finnair's stock price combined with the investor groups' shareholdings' market values. The total market value of the equity hit 868 million euros in January 2007. Operating in the airline industry, Finnair is highly reliant on kerosene prices and therefore the price of oil has major implications for the company's financial performance. The high price of oil resulted in the deterioration of the company's business results and prospects around the time of the financial crisis and the company's share price has been stagnant ever since 2008.

Stockmann

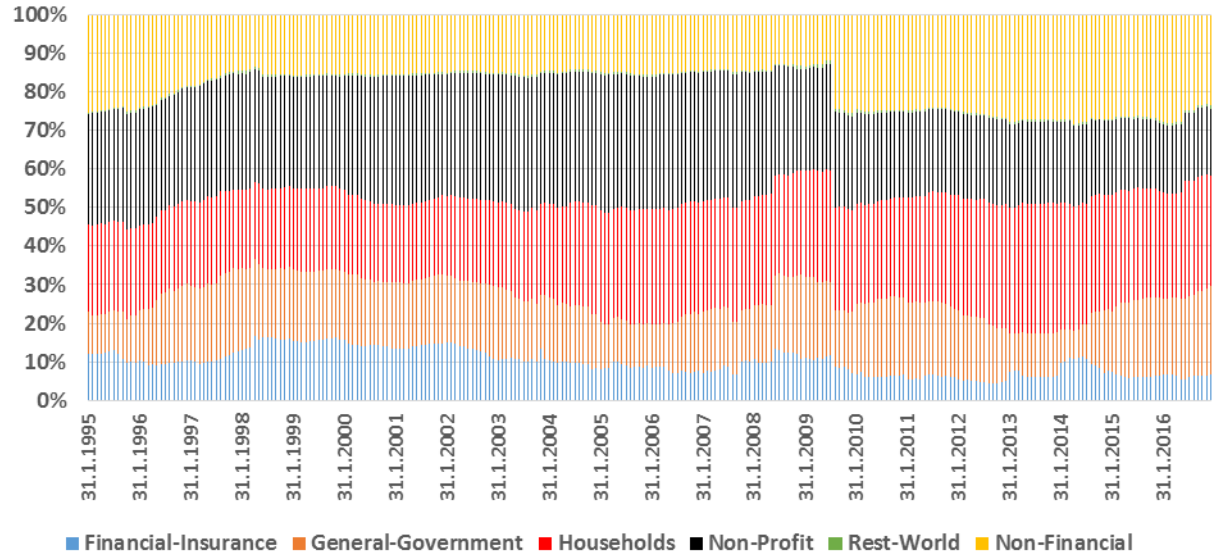

Chart 11. *Monthly ownership structure of Stockmann B shares, 1995-2016.*

Chart 11 presents the shareholdings of all investor groups as percentage values of the amount of B shares outstanding. The large jump in Non-Financial investor group holdings in August 2009 was a result of a directed share issue to HTT Holding Oy Ab, a holding company owned by the Finnish Hartwall family. Another share issue was performed by the company in September 2009 which was subscribed to by all investor groups rather evenly and therefore not resulting in major jumps in the shareholdings by investor group. Other than these events there were no major monthly changes in stock ownership, however the shareholdings by different investor groups fluctuated significantly over the study time period.

Stockmann	**Maximum**		**Minimum**		**Average**
	%-value	Date	%-value	Date	
Financial-Insurance	16.64 %	April-98	4.26 %	August-12	9.87 %
General-Government	22.87 %	December-16	7.05 %	April-14	16.43 %
Households	33.90 %	October-13	19.87 %	October-01	25.90 %
Non-Financial	28.33 %	April-14	11.79 %	June-09	19.35 %
Non-Profit	35.78 %	March-05	17.27 %	December-16	27.91 %
Rest-World	1.03 %	June-09	0.29 %	October-14	0.52 %

Table 9. *Monthly maximum, minimum and average ownership stakes in Stockmann by investor groups, 1995-2016.*

In Table 9, the maximum, minimum and average ownership stakes of investor groups are presented in percentage values of the amount of shares outstanding (B class). Stockmann's shares were widely dispersed across all investor groups with four groups total average ownership stake during the study period at 90 percent. Foreign investors and institutional investors were the two groups with the least significant holdings in Stockmann,

institutional investors averaging just below 10 percent and foreign investors averaging 0.5 percent stakes of all non-nominee shareholdings in the B share class of Stockmann. Non-Profit and Households investor groups had the highest average stakes in the company during the study time period with 27.9 percent and 25.9 percent stakes, respectively. The Finnish Government and Non-Financial companies' investor group were significant shareholders in Stockmann B shares as well with their stakes averaging 16.4 and 19.4 percent, respectively. The Government's stake hit it's all-time high in December 2016, the end of the study time period, at 22.9 percent.

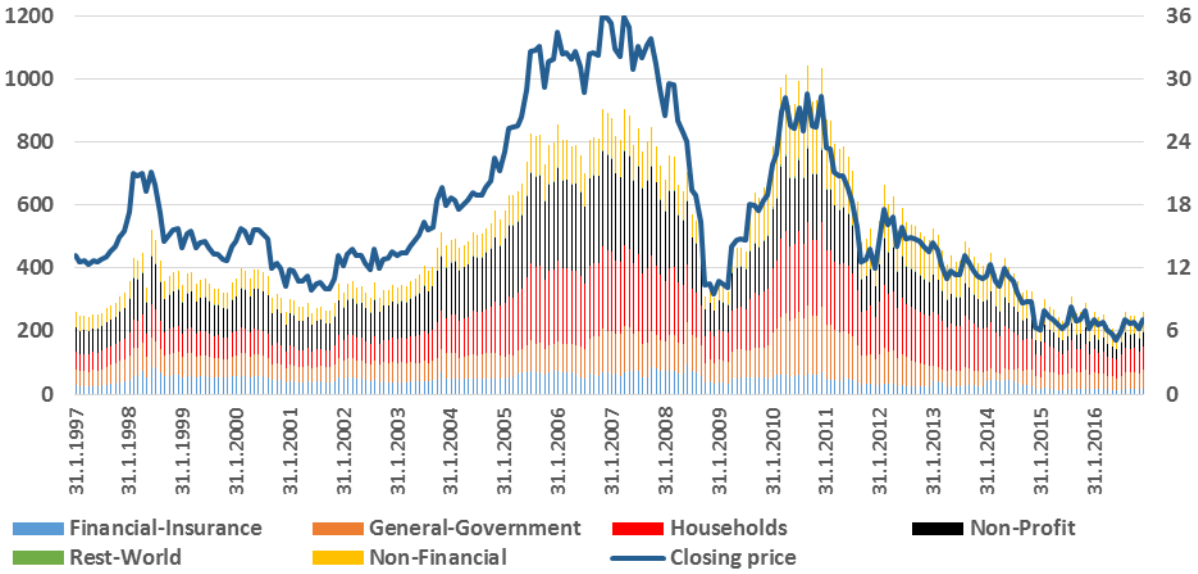

Chart 12. *Monthly ownership stakes in Stockmann class B shares (left-hand axis values in million euros) and closing prices, 1997-2016.*

Chart 12 represents Stockmann B shares stock price as well as investor groups' shareholdings market value during the study period time. The stock price decreased greatly during 2008 and 2011 and has since kept declining to the end of the time period. Institutional ownership was relatively high, at a local maximum of 13.3 percent of all non-nominee shareholdings in June 2008 just after the stock price had started to decline from all-time high levels. This is in line with literature describing institutional investors as momentum strategy driven investors (Grinblatt et al., 1995; Wermers, 1997). Research by Grinblatt and Keloharju (2000) does not support such momentum strategy behavior for Finnish institutional investors.

Saga Furs

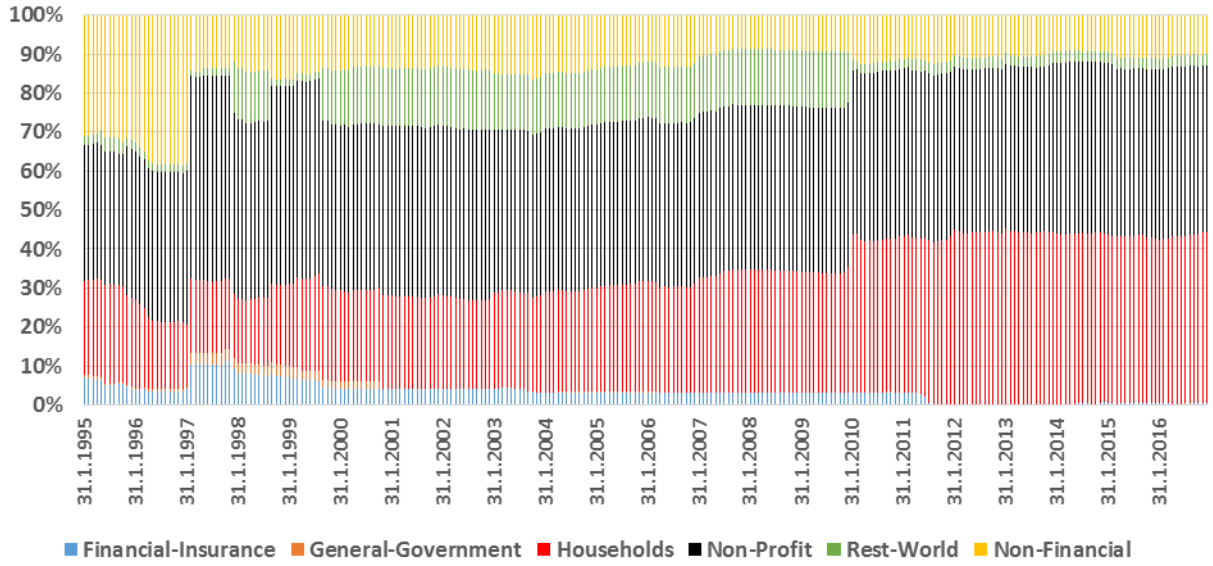

Chart 13. *Monthly ownership structure of Saga Furs class C shares, 1995-2016.*

Chart 13 presents the monthly ownership stakes of all investor groups across the study time period as percentages. General-Government and Non-Profit groups' ownership has been rather steady during the 22 year time period while the other investor groups' shareholdings have varied greatly in size. The Finnish Government has played next to no role in Saga Furs ownership while Finnish Fur Breeders' Association (FFBA), the controlling shareholder party of Saga Furs has had a large and steady ownership stake in the company during the time period. Local and national (Finnish) fur breeders' associations hold the majority of the A shares in the company, the A shares entitling owners to 12 votes compared to the C shares 1 vote for each share, respectively. Institutional investors as well as foreign investors have had very little exposure to Saga Furs in terms of shares held, both groups having very small ownership stakes in the company.

Saga Furs	**Maximum**		**Minimum**		**Average**
	%-value	Date	%-value	Date	
Financial-Insurance	11.27 %	October-97	0.09 %	November-11	3.36 %
General-Government	3.03 %	August-97	0.00 %	November-00	0.50 %
Households	44.89 %	January-13	16.12 %	March-98	30.46 %
Non-Financial	38.47 %	December-96	8.58 %	September-07	14.25 %
Non-Profit	52.90 %	July-97	33.74 %	October-95	42.94 %
Rest-World	15.23 %	July-02	1.22 %	February-97	8.50 %

Table 10. *Monthly maximum, minimum and average ownership stakes in Saga Furs by investor groups, 1995-2016.*

Table 10 represents the maximum, minimum and average values of ownership stakes held by different investor groups across the study time period. Non-Profit group, as described

earlier, has had the most significant role as an owner in the company with an average of 42.9 percent ownership stake in the non-nominee class C shares held during the study time period. Households and Non-Financial companies were the two other significant investor groups in Saga Furs with ownership stakes averaging 30.5 and 14.3 percent during the study time period. There was major variance in the ownership stakes of households, institutional investors, foreign investors and Non-Financial companies' investor group. Households' ownership stake ranged between the minimum of 16.1 percent in March 1998 and the maximum of 44.9 percent in January 2013. The Non-Financial group's ownership stake ranged between the minimum of 8.6 percent in September 2007 and the maximum of 38.5 percent in December 1996. The company was controlled during the whole time period by fur breeders' associations through a similar ownership stake organization as Kone, where non-listed class A shares enabled the associations to hold the majority of the votes within the company.

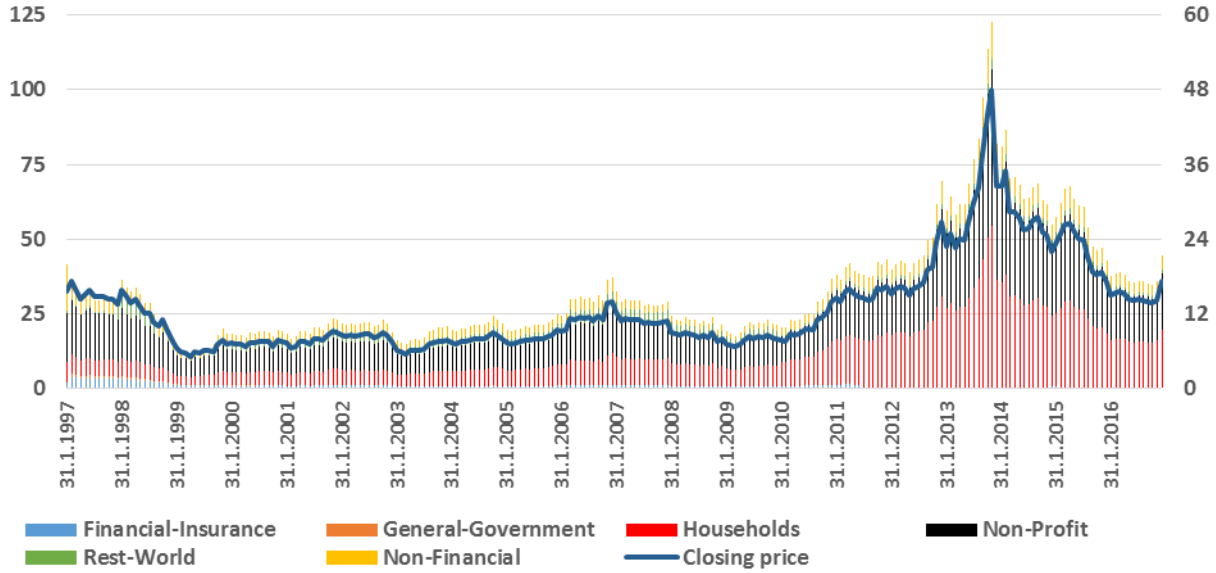

Chart 14. *Monthly ownership stakes in Saga Furs class C shares (logarithmic left-hand axis values in million euros) and closing prices, 1997-2016.*

Chart 14 presents Saga Furs C shares' monthly price data with different investor groups shareholdings market value over a time period of 20 years. The chart shows that institutional investors' interest in the stock next to vanished in 2011, also present in Chart 13. This finding in institutional investors' trading behavior is supported by the findings of Grinblatt et al. (1995) and Wermers (1997). The role of household investors in the company's share has been very significant as of the whole May 2011 to December 2016 time period, constantly staying above 40 percent of all non-nominee shareholdings.

5.3 Investor groups' trading behavior

This Chapter will follow the order of the case companies established in Chapter 5.1. Tables showing the main findings of companies' High/Low analysis and Monthly analysis will be presented respectively, according to the case order established in Chapters 5.1. Examples of how the momentum scores are calculated were presented in the latter part of Chapter 4.3. In all of the following tables and analysis one must note that nominee shareholdings are completely excluded from the analysis and therefore the majority of large foreign investors' data is not included. The institutional investors group (Financial-Insurance) is more representative of Finnish institutional investors than a global set of institutional investors.

High/Low analysis

		Nokia	Kone	Sampo	UPM	Finnair	Stockmann	Saga Furs
Financial-Insurance	***Median***	-5.60	1.63	-0.98	1.48	0.05	0.28	0.00
	Average	-5.54	2.17	-1.94	5.51	-4.00	3.85	-10.10
Households	***Median***	-0.40	-0.61	-0.40	-1.84	-2.13	-1.12	-0.55
	Average	-0.16	-1.12	-0.73	-1.91	-1.53	-0.79	-0.02
Rest-World	***Median***	-9.41	-0.01	-3.39	-6.25	0.31	0.52	0.00
	Average	-2.22	1.98	-10.31	-7.34	2.40	2.52	-31.78

Table 11. *The High/Low analysis for all case companies with average and median momentum scores for each investor group.*

Table 11 represents the findings of the High/Low analysis for each case company and for three investor groups, Financial-Insurance companies (=institutional investors), Households group (=household investors) and Rest-World group (=foreign investors). Each of these values is calculated using only non-nominee shareholdings' data. In order to reach momentum scores' median and average values, only two months data for each year was used, the month that set the year-high stock price and the month that set the year-low stock price. An example of such calculation is done in Table 2 located in Chapter 4.3 for reference of the methodology used.

Institutional investors seem to have different tendencies of trading behavior depending on which company they are investing in according to Table 11 momentum scores. In the cases of UPM-Kymmene and Kone, institutional investors had a strong preference for momentum trading during the study time period's annual stock price high and low months. A similar pattern can be observed in the case of Stockmann, however here the median momentum score is only 0.28 which leaves the data inconclusive of any strong indication of momentum trading. This type of momentum trading by institutional investors is supported by literature (Grinblatt et al. 1995; Wermers, 1997).

Institutional investors seemed to trade using a contrarian trading strategy in annual high and low months in the cases of Nokia, Sampo, Finnair and Saga Furs. The median and average momentum scores in the case of Nokia were -5.60 and -5.54, respectively, representing very heavy tendency for contrarian trading. The momentum scores for institutional investors' trading in Sampo were uniformly negative as well with lesser values of just below -1 and -2 for median and average values, respectively. In the cases of Finnair and Saga Furs, the institutional ownership was rather small during the study time period with little trading action compared to the other case companies, resulting in median momentum score values of 0.05 (Finnair) and 0.00 (Saga Furs) and average momentum scores of -4.00 (Finnair) and -10.10 (Saga Furs) representing contrarian trading tendency to a lesser extent than in the case of Nokia, where the ownership stake of institutional investors was considerably larger in market values. This sort of contrarian trading tendency of institutional investors has support from Dutch and Finnish research (De Haan and Kakes, 2011; Grinblatt and Keloharju, 2000), however there exists contrary findings from the American research (Grinblatt et al. 1995; Wermers, 1997).

Table 11 shows clearly that household investors have a contrarian strategy, represented by negative momentum scores across all case companies, towards each of the case companies. This contrarian trading tendency manifests itself in different levels of strength with the strongest contrarian trading patterns occurring in Finnair and UPM-Kymmene with median momentum scores of -2.13 and -1.84, respectively and average momentum scores of -1.53 and -1.84, respectively. The smaller values of momentum scores of household investors compared to institutional investors are perhaps explained by the following facts. This contrarian trading tendency of household investors is supported by past findings in the Finnish marketplace (Grinblatt and Keloharju, 2000).

The number of household investors is vastly greater than the amount of institutional investors in the data set, as well as the fact that the average shareholding per each such investor is vastly smaller for household investors compared to institutional investors. Large block trading of institutional investors might lead into greater momentum scores present in Table 11. Another factor that might explain such differences in values could be that institutional investors are more sophisticated and therefore act more rationally and more uniformly in the months where stock prices hit their annual highs and lows.

Foreign investors, represented by Rest-World group in Table 11, have both negative and positive value momentum scores across the case companies. The absolute values of these are vastly greater than the values of household investors, perhaps explained by the small shareholdings (as of percentage of all non-nominee shareholdings) of the group as well as the fact that foreign investors portfolios tend to be greater in value than those of domestic household investors. Foreign investors had very large negative median and average momentum scores, representing contrarian trading strategy, in the cases of Nokia (-9.41 and -2.22, respectively), Sampo (-3.39 and -10.31) and UPM-Kymmene (-6.25 and -7.34). These contrarian findings for foreign investors are contrary to those of Grinblatt

and Keloharju (2000) in the Finnish marketplace although they studied all foreign investors as a group, including foreign institutions that have large ownership stakes in many case companies, and it is not clear whether foreign investors who make direct investments into Finnish equities are as sophisticated in their trading as foreign institutional investors.

For the other four case companies the results were more of a mixed bag with smaller absolute values of momentum scores as follows. For Kone, the median value was -0.01 and the average was 1.98, representing somewhat momentum trading tendency. For Finnair, the scores average and median scores were 0.31 and 2.40, respectively. In the case of Stockmann, the average and median scores were 0.52 and 2.52, respectively, and for Saga Furs these scores were 0.00 and -31.78, respectively. In the cases of Kone, Finnair and Stockmann the foreign investors had a tendency for momentum trading, supported by earlier findings by Grinblatt and Keloharju (2000) about foreign institutional investors. In the case of Saga Furs the foreign investors' shareholdings were so small and the trading activity so little that any conclusion drawn from these scores is very likely ill-informed.

Monthly analysis

		Nokia	Kone	Sampo	UPM	Finnair	Stockmann	Saga Furs
Financial-Insurance	***Median***	-3.00	1.07	-0.21	-2.52	-0.23	0.35	0.00
	Average	-3.66	1.19	-1.95	-3.73	0.57	2.71	2.93
General-Government	***Median***	-1.14	-0.02	-0.16	-0.93	-0.01	-0.17	0.00
	Average	-1.57	-0.31	-0.48	-1.30	-0.21	-1.54	5.01
Households	***Median***	-1.31	-0.27	-0.39	-1.05	-1.17	-0.28	-0.08
	Average	-1.94	-0.34	-0.29	-1.21	-2.17	-0.28	-0.91
Non-Financial	***Median***	-1.03	-0.10	-0.08	-2.77	0.04	-0.03	-0.31
	Average	2.03	-0.08	-7.48	-0.55	-22.79	-0.02	-0.57
Non-Profit	***Median***	-0.15	0.09	0.02	-0.19	0.66	0.00	0.00
	Average	-0.18	0.08	-0.19	-0.18	2.79	0.17	0.04
Rest-World	***Median***	1.09	-0.31	-0.61	-0.37	0.00	0.23	0.00
	Average	3.32	-1.40	30.67	0.74	-426.64	2.13	-10.00

Table 12. *The Monthly analysis for all case companies with average and median momentum scores for each investor group.*

Table 12 presents the results for the Monthly analysis, median and average momentum scores, for all six investor groups across all case companies. These results will be summarized next, following the same logic as in the High/Low analysis by looking at one investor group's trading behavior at a time. Afterwards, observations of company-specific trends in momentum scores will be listed.

Institutional investors' trading behavior varied greatly across the case companies during the study time period. Clear tendency for contrarian investment/trading strategy was present in the cases of Nokia, Sampo and UPM-Kymmene. The median and average momentum scores were -3.00 and -3.66, respectively, for Nokia, -0.21 and -1.95 for Sampo and -2.52 and -3.73 for UPM-Kymmene. These scores, especially the ones in the cases of Nokia and UPM-Kymmene signalled strong inclination for contrarian trading strategy, supported by Dutch data (De Haan and Kakes, 2011). The findings of Grinblatt and Keloharju (2000) regarding Finnish institutional investors support minor preferences for contrarian trading as well. On the contrary, such trading behavior is not supported by Wermers (1997) research into mutual funds' trading strategies in the US.

Institutional investors had positive momentum scores in the cases of Kone, Stockmann and Saga Furs while the scores in the case of Finnair were both positive and negative with small absolute values and therefore Finnair scores were deemed inconclusive. This momentum style trading in Kone, Stockmann and Saga Furs was not very strong as the median momentum scores were 1.07, 0.35 and 0.00, respectively, while the average momentum scores were 1.19, 2.71 and 2.93, respectively. Such momentum trading behavior of institutional investors is supported by research about mutual funds operating in the US and Germany (Wermers, 1997; Grinblatt et al., 1995; Baltzer et al., 2018) while few papers report the contrary (De Haan and Kakes, 2011, Grinblatt and Keloharju, 2000).

The Finnish Government had negative average and median momentum scores across all case companies except for Saga Furs. For Saga Furs, the median and average values were 0.00 and 5.01, respectively. For all other case companies the scores were rather small by absolute value, however, all were negative representing contrarian trading behavior. The finding of Grinblatt and Keloharju (2001) support the finding that the government has a tendency for contrarian trading. These scores are not fully representative of the Government's trading actions as some investments have been transferred during the study time period into Solidium, the government-owned investment vehicle which is listed under the Non-Financial investor group category. This distorts the reality to some extent and most definitely weakens this method's power of assessing government trading behavior.

Household investors have been categorized in the Finnish marketplace as contrarian traders by Grinblatt and Keloharju (2000). This study finds strong support to their view as every median and average momentum score calculated for household investors is of negative value, representing contrarian trading behavior. The highest values in this study were found in the cases of Nokia, UPM-Kymmene and Finnair, all greater than 1.00 in absolute value. In the other 4 case companies, the median and average momentum scores were also negative, however smaller than 1.00 in absolute value. The smaller absolute values, compared to say those of institutional investors, might represent the fact that household investors are less sophisticated than institutional investors and the investment decisions might therefore be more diverse in general, leading to less herding behavior by

household investors. This contrarian trading style of household investors is supported by research into German markets (Baltzer et al., 2018).

In the case of Non-Financial companies' investor group the momentum scores are negative, representing contrarian trading strategy, in all cases except the median momentum score for Finnair (which was -0.04) and the average score for Nokia (which was 2.03). All of the values were rather small with the exception of Nokia, where the median momentum score was -1.03 and the average score 2.03. Non-Financial group's trading behavior is interesting, however the findings are distorted by the fact that the majority of the case companies are belong to the group and therefore their share buyback programs are included in the group's trading data. This is why the findings in the case of Nokia are problematic as the majority of this trading activity is driven by the company's share buyback program and therefore any conclusion about the investor group's behavior drawn from this data is most likely imaginary and not supported by the actual data about the group's trading behavior.

Non-Profit investor group's momentum scores were of very small values with the exception of Finnair, where the median and average scores were 0.66 and 2.79, respectively, representing significant momentum trading behavior, which is not supported by past research into the Finnish marketplace (Grinblatt and Keloharju, 2000). The investor group has been described in past literature (Grinblatt and Keloharju, 2000) as more sophisticated than households in Finland as well as less contrarian than household investors, which is supported by the momentum scores reported in Table 12.

Foreign investors' momentum scores were a mix of contrarian and momentum trading strategies with both positive and negative values. Due to the small shareholdings, the average values of momentum scores were extremely high in 3 cases, 30.67 for Sampo, -426.64 for Finnair and -10.00 for Saga Furs. Foreign trading in Nokia and Stockmann was momentum based with median and average scores of 1.09 and 3.32, respectively, for Nokia and 0.23 and 2.13 for Stockmann. In the case of Kone, the median and average momentum scores were -0.31 and -1.40, respectively, representing contrarian trading tendency. The momentum trading tendency for foreign investors has support from past research into the Finnish market (Grinblatt and Keloharju, 2000). Foreign investors represented by the Rest-World investor group had small shareholdings in the case companies during the study time period. One reason for this is the fact that nominee shareholdings were left out of the study and therefore all major foreign institutions shareholdings are not included in the study and the data is limited to direct foreign investments mainly done by foreign household investors.

6. RESULTS

In this chapter, the observations of data analysis will be further explored and explained. First, ownership structures and their variations across companies and their evolvement over time will be discussed. Next, investor group behavior over time will be discussed. For these results there exists two separate statistics in the data analysis – one containing all six investor groups trading behavior on a monthly basis when compared to monthly returns and the other looking at three investor groups trading behavior on only two months every calendar year, the one where an annual high of the stock price is set and another where an annual low of the stock price is set.

Ownership structures of all selected case companies remained rather stable during the over two decade long time frame, exceptions in terms of time period being Kone, which was listed as a stand-alone company in May 2005 and Sampo, for the data set begins in July 1997. Using the ownership structure framework established in Chapter 2.1 the study resulted in the following results:

- Nokia had dispersed ownership for the whole time period
- Kone had family ownership for the whole period with Herlin family controlling the company
- Sampo had dispersed ownership for the majority of the time period with the Finnish Government holding a majority stake for a short time period of time (of all A shares) and for the majority of the time period the Government held the majority of all non-nominee shares with the help of Solidium, the government investment vehicle
- UPM-Kymmene had dispersed ownership for the whole time period
- Finnair was government-owned for the whole time period as it has been deemed a strategic holding by the Finnish government
- Stockmann had dispersed ownership for the whole time period
- Saga Furs had dominant ownership for the whole time period, dominant owner being the Finnish Fur Breeders Association, a non-profit organization

The Finnish government has been a shareholder in all case companies, however the ownership stakes have varied in size greatly. The government has been the dominant and/or controlling stockholder in two of the seven companies, Sampo and Finnair during the study time frame. However, at the end of the time frame the government remains a majority stockholder in Finnair for strategic reasons while the government has sold the majority of its equity holdings in Sampo, holding less than 10 % of the total equity directly as of December 2016 and more through Solidium, the government investment vehicle.

Nokia, UPM-Kymmene and Sampo have been very popular investment choices for domestic institutional investors with ownership stakes averaging 11.1, 15.0 and 12.6 percent, respectively, over the study time period. Household investors have shown a clear preference for Nokia, UPM-Kymmene and Saga Furs with average ownership stakes of 39.6, 38.6 and 30.5 percent, respectively, over the study time period. One must note that all of these ownership stakes are of total non-nominee shareholdings as nominee shareholdings are completely excluded from this research. The majority equity stake held by the Finnish government in Finnair limits the ownership share of all other investor groups and this might also make institutional investors shun away from the company due to strong government interests and control through the government holding the majority of the company's equity. This explains the steady ownership base of Finnair in terms of different investor groups' ownership stakes.

There was plenty of variation in the case companies' ownership structure evolvement during the time period observed. Sampo had enormous variation due to the fact that it merged with Leonia, a government-owned bank resulting in a large increase in the Finnish Government's ownership stake in the company. Over time, this effect was diluted as the Finnish Government disposed the majority of its stake in the company and reorganized some of it into Solidium, the government's investment vehicle listed as a Non-Financial company. Stockmann's ownership structure had a major step-function change due to a directed share issue, explained in detail in Chapter 5.2. Both UPM-Kymmene and Nokia had active share buyback programs during the study time period which created statistical artefacts in Chapter 5.2 and appeared as variance in the ownership which was not actual but rather artificial. Kone, on the other hand, retained very stable ownership structure during the time period, which was shorter than for the other case companies. This might be explained by the Herlin family acting as the controlling shareholder of the company through a dual share class structure of the company.

Share buyback programs distort the picture of Non-Financial companies' ownership stakes (and institutional investors' stake in Sampo) in many of the case companies, which is why findings in this group's ownership stake variance are not of major scientific value or interest. Mergers and acquisitions using equity financing resulted in major step-function changes in the case companies' ownership structures, mainly the Alcatel-Lucent merger by Nokia, Leonia and Mandatum mergers by Sampo and Haindl acquisition by UPM-Kymmene.

Foreign ownership, looked at in this study as the Rest-World group, was very small in all companies due to the research methodology, where all nominee shareholdings and transactions were excluded from the data set and therefore foreign ownership of the case companies seems artificially small in Chapter 5.2. The actual ownership of Nokia, for an example, is in the hands of foreign institutions as over 80 percent of all Nokia shares are held in the nominee arrangement, where the true owner of the shares is hidden behind an intermediary.

The most significant findings from the data analysis of Chapters 5.2 and 5.3 were that household investors tend to follow contrarian trading strategies across all case companies and domestic institutional investors follow both, contrarian and momentum trading strategies, depending on the case company, during the study time period. This is in line with previous research into investor behavior in the Finnish stock market (Grinblatt and Keloharju, 2000; Grinblatt and Keloharju, 2001) as well as Dutch research about institutional investors' trading behavior (De Haan and Kakes, 2011). Grinblatt and Keloharju's findings about the Finnish Government using contrarian trading strategy was confirmed and no support was found for their claim of non-profits pursuing contrarian trading strategies, perhaps because the data sample used in this study was rather limited in terms of non-profit trading. However, past research (Wermers, 1997; Grinblatt et al., 1995) into US mutual funds trading strategies does not support this study's findings about institutional investors trading strategies.

7. CONCLUSIONS

The case companies ownership structures remained stable during the study time period with a few major step-function changes related to major equity issues, mergers and acquisitions as well as ownership reorganizations. This study shed light on the case companies ownership structure throughout the study time period. As a conclusion regarding the ownership structures' and their evolvement, the variance was very company- and event-specific and the variability in ownership was not very high even in those cases, where multiple special events affecting ownership structure were present during the study time period.

Trading patterns of different investor groups had tendencies different from one and another and such findings have academic support from papers (Grinblatt and Keloharju, 2000; Grinblatt and Keloharju, 2001; De Haan and Kakes, 2011; Baltzer et al., 2018) studying the Finnish, Dutch and German marketplace while the findings of this study are contrary regarding institutional investors' trading behavior compared to research (Wermers, 1997; Grinblatt et al., 1995) in the US marketplace. Domestic investors seem to exhibit contrarian trading patterns more so than momentum trading patterns, which are exhibited more by foreign institutional investors. The trading of foreign institutional investors was left out of this study, however the above statement can be made due to every trade having two parties involved, a buyer and a seller and when one exhibits contrarian strategy, the other will exhibit momentum strategy by this study's definition.

This research employed data about non-nominee shareholdings and therefore the charts and tables presented in the study do not represent the total amount of shares outstanding by each case company, but rather the equity held by domestic investors and corporations. This results in a non-complete picture of corporate control, so the results should not be employed in any way to establishing views on control exerted through voting rights in the case companies.

As citizens and future retirees everyone in the society should be concerned about their savings being employed into the stock market with an optimal strategy in order to first and foremost protect buying power in the future whether that is through their personal savings through private investing or via an investment vehicle. The most relevant savings (or investments) for an average Finnish citizen being their pension funds that are being managed by the large pension funds, one would indeed hope that the pension funds would follow an optimal strategy in capital allocation, or investment, decisions. This research suggests that Finnish institutions employ both a contrarian strategy and a momentum strategy in the Finnish stock market, depending on which case company was being studied. Grinblatt and Keloharju (2000) found that foreign institutional investors achieved superior returns in the Finnish market using momentum strategies and support for such

claim has been documented in the US market as well (Wermers, 1997). In theory, pension funds should have very long-term investment horizons and contrarian strategy should work better than a momentum strategy if used in long-term investing contrary to trading activities where momentum strategies have been proven successful.

Poor long-term pension fund returns have somewhat plagued the Finnish pension system and this might be a result of poor investment decisions in terms of assets chosen for investment as well as in terms of asset classes chosen for investment. Pension funds have a large, long-term funding constituency, which would achieve superior performance if riskier assets such as stocks were chosen to the pension fund portfolio more often than assets such as fixed income, for an example government bonds, which often provide less volatility combined with poorer returns. A better pension system would result in better results in terms of investment returns. Having any part of the pension funds employed into bonds is irrational due to the large gap between expected return rates of stocks and bonds in an operating environment where pension funds could and should be employed with a long-term strategy with optimal returns targeted over a multi-decade time period instead of focusing on quarterly or annual results of the pension funds. A great example of this is the Singaporean system, where another benefit is the savings/investment rate of the citizens being similar to Chinese rates on top of a rational investment strategy employing the funds provided by the taxpayers in Singapore. Every taxpayer in Finland should be concerned about the current system and its sustainability, as we could and should do better.

7.1 Meeting the objectives & assessment of the limitations and quality of the study

Meeting the objectives

The research posed three questions which were investigated through data analysis. One of them concerned the ownership structure of the case companies, another the evolvement of these structures and the third was about investor groups' behavioral tendencies. Answering these questions was successful, however the findings were not specifically out of line with previous global research into ownership structure and investor behavior. The three research questions will be repeated next along with findings of this study. After this a short discussion about the answers to these questions will be presented. This chapter will end with discussion about the limitations and the quality of the study.

What is the ownership structure of Finnish public companies like?

The case companies' ownership structures varied greatly. Institutional investors had a clear preference for large market capitalization firms during the study period, supported by previous research (Gompers and Metrick, 2001). As Pedersen and Thomsen (1997) described, the Finnish marketplace has plenty of diversity in ownership structures of com-

panies, which was supported by the data used in this study. Ownership of the case companies was very diverse, with four of them being diffusely owned, one being family-controlled (Kone), one being controlled by non-profit associations (Saga Furs) and one being government-controlled (Finnair).

How does this ownership structure evolve over time?

The ownership structure has some variance over time, however the ownership stakes held by different investor groups at the beginning and at the end of the study period were very similar to each other. Government- and family-owned companies seem to have more stable ownership structures with smaller free floats of the companies' equity contributing to this stability. Smaller companies, namely Saga Furs in this case study, seem to have more volatile ownership structures even though it was controlled by non-profit associations for the whole study time period.

Do investor groups have differing, systematic tendencies from one and another in terms of their buying and selling decisions related to the case companies?

This study found that domestic investors have a significant tendency for employing contrarian trading strategies and the degree of such tendency is inversely related to investor sophistication as documented by Grinblatt and Keloharju (2000) in the Finnish stock market. Household investors tend to act in a contrarian manner in the marketplace in each of the case companies respect, while domestic institutional investors had differing tendencies depending on the case company in question, employing both contrarian and momentum based trading strategies. Non-Financial companies' trading behavior could not be reliably identified during the research due to share buyback programs and the retirement of the bought back shares distorting the view on the investor group's trading patterns. One can make a strong hypothesis with this paper's findings that foreign institutional investors employ a momentum strategy in the Finnish marketplace, as reported by Grinblatt and Keloharju (2000).

Discussion of the results

The study was successful in assessing the ownership structure of the case companies over a long time period. The resulting view on ownership structure is not perfect in any way due to various reasons that compromise the exact structure, for an example the exclusion of nominee holdings or an estate's assets and their redistribution. However, the picture given by the study should reflect the actual ownership and investor groups' trading patterns somewhat well given the restrictions due to the inability to look at nominee shareholdings and the changes within them. The results shed light to the Finnish capital market environment and are in line with past research with differing ownership structures for companies of different sizes and in different businesses.

Evolvement of the ownership structure was found to be rather small, or the ownership structures seemed to be rather stable over time. In the long-term there were only minor changes and some step-function changes were found in cases where the company in question completed large directed issues of equity for balance sheet strengthening and acquisition purposes. Stock splits are common practice in the Finnish marketplace and these did not have major effects on ownership structures. As explained by companies' managements, rationale behind stock splits seem to be pleasing the financial industry incumbents preferences by increasing the liquidity of the equity in question.

This research identified trends or behavioral biases present in the Finnish marketplace in multiple investor groups. Household investors were found to be contrarians and finance and insurance companies to be both, contrarian-based and momentum-based traders in terms of monthly trading behavior compared to monthly returns. Here, it was found that European research findings could be extended to the Finnish market, while some findings from the US market could not be extended to the Finnish market.

Limitations and quality of the study

This study was in no terms comprehensive in its study of ownership structure changes and investor trading behavior. To a large part that is a result from the monthly snapshots of ownership structure and changes in it. Another major limitation was the fact that nominee shareholdings, which represent often large ownership holdings, were not accounted for in the study. Various equity issues had a negative effect on the completeness of the data analysis due to many exclusions in terms of monthly data. Large ownership restructurings such as that of Sampo's and major acquisitions where equity was used as currency made it impossible to use these months' data in the analysis.

Quality of the data has been found not to be perfect, yet it is rather close to being true. Unfortunately, 100 % true and complete data is not often available and this study was completed with high precision and care utilizing the available data. The data analysis was not very rigorous in terms of mathematical and statistical computations used. Therefore the study quality might be compromised in quantitative terms, however this does not make the study's findings irrelevant in terms of qualitative findings. Choosing to analyze monthly data limited the scope and findings of the study as analyzing daily returns would have provided the study with a more detailed picture, especially into trading and less so into long-term investment decisions, via more data points for quantitative analysis.

After diligent analysis, investor age by birth decade was found to have no significant effects on any metrics that were identified and therefore this data was not taken advantage of during the final data analysis of the study. There could have been many major error sources in separating holdings by investor birth decade especially due to estates of past investors being redistributed to the next of kin. Keloharju et al. (2012) have found significant wealth effects attributable to age and these were supported by the data but a decision

was made to not complete more extensive research into this variable. It should be rather obvious that older individuals have had more years to accumulate savings and reinvest dividends than younger individuals as well as having higher earning power due to having more working experience and therefore rare skills prized more by the marketplace than those possessed by younger individuals.

Volatility was not included as a variable in the data analysis despite the study citing many papers regarding volatility and its linkage to investor groups, namely institutional investors. Including volatility in the data analysis would have been interesting, yet looking at this option proved to be more of a distraction from the key findings, behavioral biases of investor groups. Therefore, the variable was left out of the study and this resulted in limited findings and underutilization of the potential of this particular data set.

7.2 Future research

This thesis combined many sources of stock market information into one study and multiple future research subjects were identified during the study. Many areas of the available data were left rather untouched giving future researchers the opportunity to build on past research by looking at other variables and perhaps by adding additional variables to the research equation.

One of the major variables that was left out of this research was volatility. Including volatility in a similar study would present many opportunities for new findings and extension of past research into the Finnish market environment. A PhD project involving volatility as a variable is very conceivable and interesting in terms of scientific discovery. Market and company-specific volatility would be interesting variables to introduce into a similar research as companies do have differing volatilities in the marketplace – perhaps investor groups and their involvement in the company ownership structure could be tied to the company's equity volatility compared to that of the Finnish market as a whole. Another similar topic would be to repeat Barrot et al. (2016) study in the Finnish marketplace and see if individual investors did provide liquidity during the dot-com and the financial crisis and whether they were compensated for doing so.

Another very interesting topic would be individual investor trading and trading decision-making. Matti Keloharju of Aalto University has published multiple interesting and excellent papers around the subject and future research opportunities can still be found in this field. One interesting topic would be to further look into different age groups investment and trading behavior in the Finnish marketplace. Another such topic would be to look at pension funds' investment records and comparing them to household investors and market indices – this would provide a great exercise at looking at how great of a cost the current pension system has had on the taxpayers overall wealth in Finland when pension funds' investment returns would be compared with those of market indices of total return in indices such as S&P 500, NASDAQ Composite (both US), DAX (Germany) or

OMXH (Finland). The opportunity cost incurred by the taxpayers could be enormous and would perhaps give a push for the public discussion towards reform. If the past record of politics is used as reference, the likelihood of reform of the pension system towards a more efficient and rational is pretty low.

Looking at different industries and ownership structures within same industries could present another interesting research area. Here, one could look at differences in management and strategy and if they correlate with ownership structure dynamics. One might use a research hypothesis that institutional investors would prefer strategies of outside innovation obtained through M&A activities. Another research topic in this field would be insider ownership and its correlation with future results in the Finnish marketplace. In the same area, one might study whether different ownership structures result in different rates of growth in book value, market capitalization, revenues and/or net profits over a long time frame or whether a major change in ownership structure will result in major changes in the abovementioned variables, for an example in cases where governments have divested large ownership stakes to other investor groups.

This thesis raised more questions than it answered and future research into many questions posed here would be warranted. Therefore, one might argue that the study was unsuccessful or that the study was successful depending on how success is defined – raising new questions or answering questions made. Data-driven research and analysis should provide our decision-makers both in politics and pension funds to make smarter decisions and pursue a more rational long-term strategy for the benefit of the people and society as a whole.

REFERENCES

Amihud Y. and Lev, B.(1981): "Risk reduction as a managerial motive for conglomerate mergers," *Bell Journal of Economics*, 12, 605-617.

Amihud, Y., and Lev, B. (1999): "Does corporate ownership structure affect its strategy towards diversification?," *Strategic Management Journal*, 20(11), 1063-1069.

An, H. and Zhang, T. (2013): "Stock price synchronicity, crash risk and institutional investors," *Journal of Corporate Finance*, 21, 1-15.

Ang, J., Cole, R. A., and Lin, J. W. (2000): "Agency costs and ownership structure," *Journal of Finance*, 55(1), 81-106.

Bae, K.H., Kang, J.K. and Kim, J.M. (2002): "Tunneling or value added? Evidence from mergers by Korean business groups," *The Journal of Finance,* 57(6), 2695-2740.

Baik, B., Kang, J-K. and Kim, J-M. (2010): "Local institutional investors, information asymmetries and equity returns," *Journal of Financial Economics*, 97, 81-106.

Baltzer, M., Jank, S. and Smajlbegovic, E. (2018): "Who trades on momentum?" *Journal of Financial Markets*.

Barber, B. M. and Odean, T. (1999): "The courage of misguided convictions," *Financial Analysts Journal*, 55(6), 41-55.

Barber, B. M. and Odean, T. (2000): "Trading is hazardous to your wealth: The common stock investment performance of individual investors," *The Journal of Finance*, 55(2), 773-806.

Barber, B. M. and Odean, T. (2008): "All that glitters: The effect of attention and news on the buying behavior of individual and institutional investors," *Review of Financial Studies*, 21(2), 785-818.

Barrot, J.N., Kaniel, R. and Sraer, D. (2016): "Are retail traders compensated for providing liquidity?" *Journal of Financial Economics,* 120(1), 146-168.

Basak, S. and Pavlova, S. (2013): "Asset prices and institutional investors," *American Economic* Review, 103(5): 1728-1758.

Baysinger, B.D., Kosnik, R.D. and Turk, T.A. (1991): "Effects of board ownership structure on corporate R&D strategy," *Academy of Management Journal*, 34: 205-214.

Berle A., and Means, G. (1932): "The Modern Corporation and Private Property," Macmillan. New York, USA. 380 p.

Bethel, J. E. and Liebeskind, J. (1993): "The effects of ownership structure on corporate restructuring," *Strategic Management Journal*, 14(S1), 15-31.

Bolton, P., and Von Thadden, E. L. (1998a): "Blocks, Liquidity, and Corporate Control," *Journal of Finance*, 53(1), 1-25.

Bolton, P. and Von Thadden, E. L. (1998b): "Liquidity and control: a dynamic theory of corporate ownership structure," *Journal of Institutional and Theoretical Economics (JITE)/Zeitschrift für die gesamte Staatswissenschaft*, 154, 177-211.

Bushee, B. J. and Noe, C. F. (2000): "Corporate Disclosure Practices, Institutional Investors, and Stock Return Volatility," *Journal of Accounting Research*, 2000, 171-202.

Campbell, J. Y. (2006): "Household finance," *Journal of Finance*, 61(4), 1553-1604.

Cho, M. H. (1998): "Ownership structure, investment, and the corporate value: an empirical analysis," *Journal of Financial Economics*, 47(1), 103-121.

Coffee, J. (1991): "Liquidity versus Control: The Institutional Investor as Corporate Monitor," *Columbia Law Review*, 91, 1277-1368.

Coval, J. D. and Moskowitz, T. J. (2001): "The geography of investment: Informed trading and asset prices," *Journal of Political Economy*, 109(4), 811-841.

Coval, J. D. and Moskowitz, T. J. (1999): "Home Bias at Home: Local Equity Preference in Domestic Portfolios," *Journal of Finance*, 54, 1-39.

Daily, C. and Dollinger, M. (1992): "An empirical examination of ownership structure in family and professionally managed firms," *Family Business Review*, 5, 117-136.

David, P., Hitt, M. A. and Gimeno, J. (2001): "The role of institutional investors in influencing R&D," *Academy of Management Journal*, 44: 144-157.

Davis, E.P. and Steil, B. Institutional Investors. *The MIT Press*. Published April 16th 2001. 406 p.

De Haan, L. and Kakes, J. (2011): "Momentum or contrarian strategies: evidence from Dutch institutional investors," *Journal of Banking and Finance*, 35(9), 2245-2251.

Demsetz, H. and Lehn, K. (1985): "The structure of corporate ownership: Causes and consequences," *Journal of Political Economy*, 93(6), 1155-1177.

Demsetz, H. and Villalonga, B. (2001): "Ownership structure and corporate performance," *Journal of Corporate Finance*, 7(3), 209-233.

Denis, D.J.., Denis, D.K. and Sarin, A. (1997): Agency problems, equity ownership and corporate diversification. Journal of Finance 52(1): 135-160.

Dhar, R. and Kumar, A. (2001): "A non-random walk down the main street: Impact of price trends on trading decisions of individual investors," *Yale International Center for Finance,* working paper.

Edwards, F.R. and Hubbard, G. (2000): " The growth of institutional stock ownership: a promise unfulfilled," *Journal of Applied Corporate Finance*, 13(3): 92-104.

El-Gazzar, S. (1998): "Predisclosure information and institutional ownership: A cross-sectional examination of market revaluations during earnings announcement periods," *The Accounting Review*, 73 (January 1998): 119-130.

Erenburg, G., Smith, J. K. and Smith, R. (2016): "Which institutional investors matter for firm survival and performance?" *North American Journal of Economics and Finance*, 37, 348-373.

Fama, E. F. and Jensen, M. C. (1983): "Agency problems and residual claims. *Journal of Law and Economics*. 26 (June): 327-349.

Feldstein, M. and Horikoka, C. (1980): "Domestic saving and international capital flows," *Economic Journal*, 90, 314-329.

Feng, L. and Seasholes, M. S. (2005): "Do investor sophistication and trading experience eliminate behavioral biases in financial markets?," *Review of Finance*, 9(3), 305-351.

Fernando, G. D., Schneible, R. A. and Suh, SH. (2014): "Family firms and institutional investors," *Family Business Review*, 27(4), 328-345.

French, K. R. and Poterba, J. M. (1991): "Investor diversification and international equity markets," *American Economic Review*, 81, 222-226.

Gabaix, X., Gopikrishnan, P., Plerou, V. and Stanley, H. E. (2006): "Institutional investors and stock market volatility," *The Quarterly Journal of Economics*, 121(2), 461-504.

Gao, L. and Kling, G. (2008): "Corporate governance and tunneling: empirical evidence from China," *Pacific-Basin Finance Journal*, 16, 591-605.

Gaspar, J. M., Massa, M. and Matos, P. (2005): "Shareholder investment horizons and the market for corporate control," *Journal of Financial Economics*, 76(1), 135-165.

Gilson, R. J. and Kraakman, R. (1991): "Reinventing the outside director: An agenda for institutional investors," *Stanford Law Review*, 43: 863-906.

Giofre, M. (2013): "International diversification: Households versus institutional investors," *North American Journal of Economics and Finance*, 26, 145-176.

Gompers, P. A. and Metrick, A. (2001): "Institutional investors and equity prices," *The Quarterly Journal of Economics*, 116(1), 229-259.

Grant, K., and Kirchmaier, T. (2005): "Corporate ownership structure and performance in Europe," *European Management Review*, 2, 231-245.

Graves, S. B. and Waddock, S. A. (1990): "Institutional ownership and control: Implications for long-term corporate strategy," *The Academy of Management Executive*, 4(1), 75-83.

Graves, S.B. (1988): "Institutional ownership and corporate R&D in the computer industry," *Academy of Management Journal*, 31: 417-428.

Grinblatt, M. and Keloharju, M. (2000): " The investment behavior and performance of various investor typers: a study of Finland's unique data set," *Journal of Financial Economics*, 55(1), 43-67.

Grinblatt, M. and Keloharju, M. (2001): "What makes investors trade?," *The Journal of Finance,* 56(2), 589-616.

Grinblatt, M., Titman, S. and Wermers, R. (1995): "Momentum investment strategies, portfolio performance and herding: a study of mutual fund behavior," *The American Economic Review,* 1088-1105.

Halko, M.-L., Kaustila M. and Alanko E. (2011): "The gender effect in risky asset holdings," *Journal of Economic Behavior & Organization*, 83(1), 66-81.

Hansen, G. S. and Hill, C. W. L. (1991): "Are institutional investors myopic? A time-series study of four technology-driven industries," Strategic Management Journal, 12: 1-16.

Heath, C. and Tversky, A. (1991): "Preferences and beliefs: Ambiguity and competence in choice under uncertainty," *Journal of Risk and Uncertainty*, 4, 5-28.

Hill, C. W. and Snell, S. A. (1989): "Effects of ownership structure and control on corporate productivity," *Academy of Management Journal*, 32(1), 25-46.

Helwege, J., Pirinsky, C. and Stulz, R. M. (2007): "Why do firms become widely held? An analysis of the dynamics of corporate ownership," *Journal of Finance*, 62(3), 995-1028.

Hoskisson, R. E., Hitt, M. A., Johnson, R. A. and Grossman, W. (2002): "Conflicting voices: The effects of institutional ownership heterogeneity and internal governace on corporate innovation strategies," *Academy of Management Journal*, 45(4), 697-716.

Huberman, G. (2001): "Familiarity breeds investment," *Review of Financial Studies*, 14(3), 659-680.

Jensen, M. C. and Meckling, W. H. (1976): "Theory of the firm: Managerial behavior, agency costs and ownership structure," *Journal of Financial Economics*, 3(4), 305-360.

Kahneman, D. and Tversky, A. (1979): "Prospect theory: An analysis of decision under risk," *Econometrica*, 46, 2 (March): 171-185.

Kang, D. (2000): "The impact of family ownership on performance in public organizations: A study of the U.S. Fortune 500, 1982-1994," *Academy of Management Meetings*, Toronto, Canada.

Kaniel, R., Liu, S., Saar, G. and Titman, S. (2012): "Individual investor trading and return patterns around earnings announcements," *The Journal of Finance*, 67(2), 639-680.

Kaniel, R., Saar, G. and Titman, S. (2008): "Individual investor trading and stock returns," *The Journal of Finance,* 63(1), 273-310.

Kaustia, M., Alho, E. and Puttonen, V. (2008): "How much does expertise reduce behavioral biases? The case of anchoring effects in stock return estimates," *Financial Management*, 37 (Autumn 2008), 3: 391-412.

Keloharju, M., Knüpfer, S. and Rantapuska, E. (2012): "Mutual fund and share ownership in Finland," *Liiketaloudellinen aikakauskirja* 02/12, 178-198.

Kochhar, R. and David, P. (1996): "Institutional investors and firm innovation: A test of competing hypotheses," *Strategic Management Journal*, 17: 73-84.

Kyrolainen, P. and Perttunen, J. (2003): "Investors' activity and trading behavior."

Lane, P.J., Cannella, A.A. and Lubatkin, M.H. (1998): ”Agency problems as antecedents to unrelated mergers and diversification: Amihud and Lev reconsidered,” *Strategic Management Journal,* 19(6), 555-578.

Lemmon, M. L. and Lins, K. V. (2003): “Ownership structure, corporate governance, and firm value: Evidence from the East Asian financial crisis,” *Journal of Finance*, 58(4), 1445-1468.

Liu, H-H., Chuang, W-I., Huang, J-J. and Chen, Y-H. (2016): “The overconfident trading behavior of individual versus institutional investors,” *International Review of Finance and Economics*, 45, 518-539.

McConnell, J. J. and Servaes, H. (1990): “Additional evidence on equity ownership and corporate value,” *Journal of Financial Economics*, 27(2), 595-612.

Odean, T. (1998): “Are investors reluctant to realize their losses,” *The Journal of Finance,* 53(5), 1775-1798.

Pedersen, T. and Thomsen, S. (1997): “European patterns of corporate ownership: A twelve-country study,” *Journal of International Business studies*, 28(4), 759-778.

Polkovnichenko, V. (2005): “Household portfolio diversification: A case for rank-dependent preferences,” *Review of Financial Studies*, 18(4), 1467-1502.

Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (1999): “Corporate ownership around the world,” *Journal of Finance*. 54(2), 471-517.

Potter, G. (1992): “Accounting earnings announcements, institutional investor concentration, and common stock returns,” *Journal of Accounting Research*, 30 (Spring 1992): 146-155.

Puttonen, V. and Torstila, S. (2003): “Risk Management in Finnish Pension Funds: A Survey,” *Liiketaloudellinen aikakauskirja*, 01/03, 31-46.

Pålsson, A. M. (1996): “Does the degree of relative risk aversion vary with household characteristics?,” *Journal of Economic Psychology*, 17(6), 771-787.

Rantapuska, E. and Knüpfer, S. (2008): "Which Investors Leave Money on the Table? Evidence from Rights Issues," *Review of Finance*, 12(4), 701-733.

Ruiz, J. L. 2018: "Financial development, institutional investors and economic growth," *International Review of Economics and Finance*, 54, 218-224.

Salancik, G.R. and Pfeffer, J.(1980): "The effects of ownership and performance on executive tenure in U.S. corporations," *Academy of Management Journal*, 23, 653-664.

Shefrin, H. and Statman, M. (1985): "The disposition to sell winners too early and ride losers too long: Theory and evidence," *Journal of Finance*, 40, 3 (July): 777-782.

Shepherd, W. G. (1989): "Public enterprise: Criteria and cases. In H. W. de Jong, editor, The structure of European industry. Dordrecht: Kluwer academic.

Shleifer, A. and Vishny, R.W. (1997): " A Survey of Corporate Governance," The Journal of Finance, 52(2), 737-783.

Shleifer, A. and Vishny, R. W. (1986): "Large shareholders and corporate control," *Journal of Political Economy*, 98(3), 461-488.

Shleifer, A. and Vishny, R. W. (1994): "Politicians and firms," *Quarterly Journal of Economics*, 109, 955-1025.

Shum, P. and Faig, M. (2006): "What explains household stock holdings?" *Journal of Banking & Finance*, 30(9), 2579-2597.

Sias, R. W. (1996): "Volatility and the institutional investor," *Financial Analysts Journal*, 52(2), 13-20.

Siikanen, M., Baltakys, K., Kanniainen, J., Vatrapu, R., Mukkamala, R. and Hussain, A. (2018): "Facebook drives behavior of passive households in stock markets," *Finance Research Letters*.

Statman, M., Thorley, S. and Vorkink, K. (2004): "Investor overconfidence and trading volume," *The Review of Financial Studies*, 19(4), 1531-1565.

Thomsen, S. and Pedersen, T. (2000): "Ownership structure and Economic Performance in the Largest European Companies," *Strategic Management Journal*, 21(6), 689-705.

Useem, M. (1996): "Investor capitalism: how money managers are changing the face of corporate America," New York: Basic Books. Published May 16th, 1996. 352 p.

Wermers, R. (1997): "Momentum investment strategies of mutual funds, performance persistence and survivorship bias," *Documento de Tabalho,* University of Colorado.

Zeckhauser, R. J. and Pound, J. (1990): "Are large shareholders effective monitors? An investigation of share ownership and corporate performance," *Asymmetric information, corporate finance and investment*, University of Chicago Press, 149-180.